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DIET LISTS
OF THE
PRESBYTERIAN HOSPITAL
NEW YORK CITY

COMPILED, WITH NOTES, BY
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SECOND EDITION, THOROUGHLY REVISED

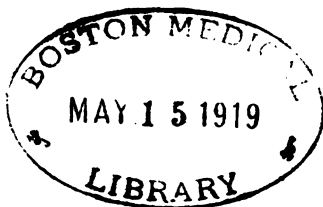
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PREFACE TO THE SECOND EDITION

IN presenting the second edition of this little diet book, an attempt has been made to include new material where necessary, and to rewrite certain portions in the light of present-day knowledge and usage. The subject of diet in diabetes has undergone a marked change, with the introduction of Allen's method, and there is included here the principles and practice of this plan of dietary control of diabetes, as modified by Geyelin and used in the Presbyterian Hospital. Advantage has been taken of the kindly criticism of the first edition to make some sections more complete, and to cut down others. It is encouraging to note the great interest in the efficacy of diet in certain conditions shown by the general practitioner, as physical means of treating disease are assuming a larger place in the practice of medicine, where formerly reliance was placed on drugs. This is in line, of course, with the modern concept of medicine which has for its object the correlation of etiology and rational treatment. The author wishes to express his indebtedness to his colleagues, Dr. Rawle Geyelin for the use of certain diets for diabetes, Dr. D. W. Atchley for salt-poor diets, No. 3, 4, and 5 and one of the cardiac diets, Dr. A. V. S. Lambert for the diet used after gastro-enterostomy, Dr. Allen Whipple for the gastric tolerance diet,

Dr. George R. Lockwood for his modification of the von Leube diet, Dr. Warren Coleman for the modified milk typhoid diets, and Dr. W. W. Palmer for his criticism and helpful suggestions in the preparation of this new edition.

HERBERT S. CARTER.

NEW YORK CITY,
January, 1919.

PREFACE TO THE FIRST EDITION

THE Diet Lists contained in this volume have been prepared primarily for use in the Presbyterian Hospital; subsequently the comments on the different diets were added, for while the indications for the use of most of the diets are self-evident, the explanatory notes add to the completeness of the presentation and may be found useful to some readers. The Table of Standard Portions was prepared originally by Prof. Irving Fisher, of Yale University, through whose courtesy I am allowed to use the first part of it, while the actual amounts of Protein, Carbohydrate, and Fat contained in each portion was worked out from Bulletin No. 28.

The Table of Food Values has been taken from Bulletin 28, 1906, of the Department of Agriculture, Atwater and Bryant.

The author wishes to express his hearty appreciation for the assistance and advice given him in the preparation of this book by Professor Theodore C. Janeway, also for permission to use certain diet lists prepared by him; to Dr. James C. Greenway, for his courtesy in placing at the author's disposal the diet lists of the New York

Hospital; and to Dr. Herman O. Mosenthal, for some of the diet lists used in the Vanderbilt Clinic, from which great assistance was derived. The author also wishes to express his appreciation to Miss Selma Granat, for the chemical analyses of some of the diets which were made by her in the laboratory of the Presbyterian Hospital.

When diets have been quoted *in toto*, due reference is made to the source of information. The idea of the table of carbohydrate equivalents was obtained from Von Noorden's writings, but adapted to an American dietary by the author.

HERBERT S. CARTER.

NEW YORK CITY.

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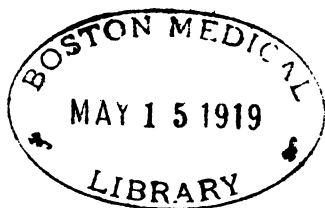
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DIET LISTS

OF THE

PRESBYTERIAN HOSPITAL,

NEW YORK CITY

INTRODUCTION

WITHOUT attempting to contribute anything new to the science of dietetics, for which the reader is referred to any one of the many excellent works on this subject, the author of the present little volume has in mind merely the presentation of certain diets and the principles governing their use from a purely clinical point of view. Although accuracy, approximately considered, and not exhaustiveness is aimed at, it is hoped that the completeness of the text will be sufficient for the purpose intended.

There is a constantly growing desire on the part of medical men to utilize more exactly the therapeutic effect of foods, but many are deterred by the seeming difficulty of the subject, and by the lack of the time necessary to prescribe an accurate diet list suited to one of the many varieties of disease. In addition,

institutions in which one would expect to find an economy in dietetic therapeutics, as well as accurate methods for arriving at desired results, are, for the most part, sadly lacking in the ability to give their inmates the benefit of a well-balanced ration and their board of managers an economic use of food stuffs. Hospitals and asylums of all sorts should find an easy and rational way to arrive at a satisfactory use of food products.

The needs of an individual who is laid up by a broken leg and one convalescing from an acute or wasting infectious disease are quite different, yet many hospitals have one standard diet for all such cases, nor is allowance made for the different requirements of men and women based on the caloric needs of the body per kilo of body weight.

In the diets here presented advantage has been taken of the facts developed by Professor Chittenden's experiments, that physiologic economy in nutrition can be maintained on a low level of protein, but no attempt has been made to keep to such a low standard, as this is obtained best by a gradual process of reduction in the protein, whereas patients in general are used to much larger amounts, and convalescents are in need of a certain extra quantity of protein to make up the loss due to the destructive katabolism from acute disease. A rational mean has been aimed at in the quantity of protein recommended which will allow a sufficient margin of safety and still be considerably below the

old standards of supposed protein requirement. The advantages to the individual and to the exchequer of the institution in this are obvious, when one considers the high cost of practically all forms of protein food.

In determining the number of heat units for men and women, an average weight of 70 kilos (154 pounds) has been assumed for men and 60 kilos (132 pounds) has been assumed for women as the basis of reckoning, allowing 30 to 32 calories per kilo of body weight, which is ample for an individual at rest or light work. This applies to the regular house diet, soft, gouty, and anticonstipation diets. In the convalescent diet a greater allowance is made, of approximately 35 calories per kilo of body weight. No hard-and-fast line has been drawn between the requirements of men and women requiring purin-free, low-calcium, or salt-poor diets, as the cases requiring these diets are never numerous in a hospital ward.

The caloric value of the primal food constituents may be stated as follows (Reubner):

	Calories
1 gm. protein.....	4.1
1 gm. fat.....	9.3
1 gm. carbohydrate.....	4.1
1 gm. alcohol.....	7.0

The caloric needs of the body under varying conditions have been variously estimated, but the following

represents the average per kilo of body weight for a man weighing 70 kilos (Von Noorden):

	Calories
Patient in bed, 30 calories per kilo . . .	2100.
Confined to room, 32 to 35 calories per kilo	2240-2450
Light exercise, 35 to 40 calories per kilo	2450-2800
Moderate exercise, 40 to 45 calories per kilo	2800-3150
Very heavy labor, 45 to 60 calories per kilo	3150-4200

**REGULAR HOUSE DIET—CONVALESCENT DIET—
SOFT DIET**

REGULAR HOUSE DIET¹

EACH DAY OF THE WEEK

TOTAL quantity of milk allowed, not over 750 c.c.
(1½ pints).

Breakfast.

Coffee or tea with milk and sugar, or milk.

Bread and butter.

Two eggs to each patient in male wards.

One egg to each patient in female wards.

Cereal with milk and sugar.

Fresh fish.

Hash.

Dinner.

Soup.

Meat or fish.

Potatoes (baked, boiled, or mashed) and one of the following vegetables: spinach, squash, boiled onions, beets, sweet potatoes, macaroni, tomatoes, corn.

Bread and butter.

Milk, 180 c.c. (6 oz.).

Pudding or fruit.

¹ Modified from New York Hospital diet lists.

Supper.

Tea or milk. Bread and butter.
 Cooked fruit (prunes, apples, or rhubarb).
 Apricots. Pears.
 Cold meat. Eggs.
 Cereal with milk and sugar. Milk-toast.

Particular Foods for the Specified Days

SUNDAY.

<i>Breakfast.</i>	<i>Dinner.</i>	<i>Supper.</i>
Wheatina.	Chicken.	Cold meat.
Eggs.	Tomatoes.	Prunes.
	Baked potatoes.	
	Fresh fruit.	

MONDAY.

<i>Breakfast.</i>	<i>Dinner.</i>	<i>Supper.</i>
Hominy.	Vegetable soup.	Eggs.
Bacon.	Roast mutton.	Apricots.
	Spinach or corn.	
	Mashed potatoes.	
	Rice pudding.	

TUESDAY.

<i>Breakfast.</i>	<i>Dinner.</i>	<i>Supper.</i>
Oatmeal.	Lamb stew.	Cereal with milk
Eggs.	Boiled potatoes.	and sugar.
	Beets.	Apples.
	Sago pudding.	

WEDNESDAY.

Breakfast.

Wheatina.
Fresh fish.

Dinner.

Chicken.
Baked potatoes.
Boiled onions.
Baked apples.

Supper.

Cold meat.
Rhubarb or
prunes.

THURSDAY.

Breakfast.

Hominy.
Eggs.

Dinner.

Pea soup.
Roast mutton.
Mashed potatoes.
Squash.
Bread pudding.

Supper.

Milk-toast.
Baked apple.

FRIDAY.

Breakfast.

Oatmeal.
Eggs.

Dinner.

Fish.
Boiled potatoes.
Macaroni and
tomatoes.
Rice pudding.

Supper.

Eggs.
Prunes.

SATURDAY.

Breakfast.

Cornmeal.
Hash.

Dinner.

Vegetable soup.
Meat stew.
Mashed potatoes.
Spinach or corn.
Cornstarch pudding.

Supper.

Eggs.
Apricots or pears.

Approximate Values to be Given

	Protein	Carbohydrate	Fat	Total calories
Men....	90 gm. (3 oz.).	300 gm. (10 oz.).	70 gm. (2½ oz.).	2200
Women.	80 gm. (2¾ oz.).	250 gm. (8½ oz.).	60 gm. (2 oz.).	1800

CONVALESCENT DIET¹

EACH DAY OF THE WEEK

Total quantity of milk allowed, not over 1250 c.c.
(2½ pints) daily.

6 A. M.: Milk, 210 c.c. (7 oz.), if desired.

Breakfast.

Coffee or tea with milk and sugar, or milk.

1 egg, or fresh fish, or plain stew.

Cereal with milk and sugar.

Toast and butter, or rolls or bread (white, graham
or brown).

Fresh fish. Stew.

Dinner.

Broth or soup with barley or vegetables

Bread and butter. Milk.

Potatoes, baked, boiled, or mashed.

Rice, macaroni, or hominy.

Beef, chicken, or fish.

Pudding, ice-cream, or

Fruit.

¹ Modified from New York Hospital diet lists.

Supper.

Tea or milk. Toast and butter or bread.
 Cooked fruit (apples, stewed or baked, prunes, rhubarb,
 apricots, or pears).

Egg.

8 P. M.: Milk, 210 c.c. (7 oz.).

Particular Foods for the Specified Days

SUNDAY.

<i>Breakfast.</i>	<i>Dinner.</i>	<i>Supper.</i>
Wheatina.	Chicken.	Egg.
1 egg.	Baked potato.	Prunes.
	Orange.	

MONDAY.

<i>Breakfast.</i>	<i>Dinner.</i>	<i>Supper.</i>
Hominy.	Roast-beef.	Egg.
Stew.	Mashed potato.	Pears or
	Rice pudding.	apricots.

TUESDAY.

<i>Breakfast.</i>	<i>Dinner.</i>	<i>Supper.</i>
Oatmeal.	Fresh fish.	Egg.
1 egg.	Boiled potato.	Apples (stewed).
	Hominy.	
	Ice-cream.	

WEDNESDAY.

Breakfast.

Wheatina.

Fresh fish.

Dinner.

Chicken

Baked potato.

Macaroni.

Tapioca pudding.

Supper.

Egg.

Rhubarb or
prunes.

THURSDAY.

Breakfast.

Hominy.

1 egg.

Dinner.

Boiled beef.

Mashed potato.

Rice.

Baked custard.

Supper.

Egg.

Baked apple.

FRIDAY.

Breakfast.

Oatmeal.

Egg.

Dinner.

Fresh fish.

Boiled potato.

Macaroni.

Ice-cream.

Supper.

Egg.

Prunes.

SATURDAY.

Breakfast.

Cornmeal.

Stew.

Dinner.

Chicken.

Mashed potato.

Hominy.

Cornstarch pudding.

Supper.

Egg.

Apricots or
pears.*Approximate Values to be Given*

	Protein	Carbohydrate	Fat	Total calories
Men...	100 gm. (3½ oz.).	300 gm. (10 oz.).	90 gm. (3 oz.).	2500
Women.	80 gm. (2½ oz.).	300 gm. (10 oz.).	80 gm. (2½ oz.).	2200

SOFT DIET

Soft diet is the same as the convalescent diet, omitting meat, fish, and green vegetables.

Approximate Values to be Given

	Protein	Carbohydrate	Fat	Total calories
Men....	60 gm. (2 oz.).	350 gm. (11 $\frac{3}{8}$ oz.).	60 gm. (2 oz.).	2200
Women.	50 gm. (1 $\frac{3}{8}$ oz.).	300 gm. (10 oz.).	50 gm. (1 $\frac{3}{8}$ oz.).	1800

MILK DIET

Milk, 3000 c.c. (3 quarts). This gives: Protein, 100 gm. (3 $\frac{1}{8}$ oz.); fat, 120 gm. (4 oz.); carbohydrate, 150 gm. (5 oz.); calories, 2160; chlorids, 5.2 gm.

LIQUID DIET

Coffee.....	165 c.c. (5 $\frac{1}{2}$ oz.)
Broth.....	675 c.c. (22 $\frac{1}{2}$ oz.)
Gruel.....	200 c.c. (6 $\frac{2}{3}$ oz.)
Tea.....	200 c.c. (6 $\frac{2}{3}$ oz.)
Milk.....	600 c.c. (20 oz.)
Sugar.....	60 gm. (2 oz.)
Egg-albumin.....	90 gm. (3 oz.)
Lemon-juice.....	60 gm. (2 oz.)

This gives: Protein, 47 gm. (1 $\frac{1}{2}$ oz.); fat, 28 gm. (1 oz.); carbohydrate, 108 gm. (3 $\frac{1}{8}$ oz.); calories, 900; chlorids, 2.6 gm.

COMMENTS ON REGULAR HOUSE DIET, CONVALESCENT DIET, AND SOFT DIET

Regular house diet, convalescent diet, and soft diet speak for themselves, and are of particular use in hospi-

tal or institutional dietaries. The variety of foods included is considerable, and should one desire to keep institutional expenses at a lower level, this can be easily done by substituting the less expensive food stuffs, keeping, however, to the same general plan. Convalescent diet should be of a higher nutritive value, more easily digestible, and contain more protein, and this change from regular house diet is indicated.

Soft diet, representing an intermediate step between fluid or milk diet and convalescent or regular diet, need not be so strictly adhered to in point of food values, as a patient's appetite can be relied upon at this stage to take a sufficient quantity.

For institutions, however, it is well to have this also standardized for economy in planning.

Fluid diet, while it contains a fair amount of protein food, is of exceedingly low caloric value, and represents what may be well to give during the first day or two of any acute illness, when one wishes to rest the organism without subjecting it to protein starvation.

Milk diet, except as modified upward in the typhoid milk diets, is of use for a time, particularly in an acute or occasionally in a chronic renal condition, its great objection being that, in order to give the necessary calories for a man, one must give large amounts of milk, 3000 to 4000 c.c. (3 to 4 quarts), which would mean that the individual must consume 100 to 130 gm. (3 to 4 oz.) of protein, an unnecessary strain to put

upon excretory organs already disabled by disease. So that, while we give not more than 3000 c.c. (3 quarts) per day for milk diet, it must be remembered that this should not be indefinitely continued.

TYPHOID DIETS

TYPHOID FLUID DIET (No. 1)¹

- 8 A. M.: Milk and coffee, each 120 c.c. (4 oz.), 240 c.c. (8 oz.).
- 10 A. M.: Milk, hot or cold, 240 c.c. (8 oz.).
- 12 NOON: Oatmeal gruel, 120 c.c. (4 oz.), with milk, 60 c.c. (2 oz.).
- 2 P. M.: Milk, 240 c.c. (8 oz.).
- 4 P. M.: Oatmeal gruel, 120 c.c. (4 oz.), with milk, 60 c.c. (2 oz.).
- 6 P. M.: Custard with lactose (full cup).
- 8 P. M.: Hot milk, 240 c.c. (8 oz.).
- 10 P. M.: Whey, 180 c.c. (6 oz.), with one whole egg and sherry.
- 12 P. M.: Oatmeal gruel, 120 c.c. (4 oz.), milk, 60 c.c. (2 oz.).
- 2 A. M.: Milk, 240 c.c. (8 oz.).
- 4 A. M.: Broth, 240 c.c. (8 oz.), with one whole egg.
- 6 A. M.: Milk, 240 c.c. (8 oz.).

Approximate Values

Protein, 98 gm. ($3\frac{1}{3}$ oz.); fat, 52 gm. ($1\frac{2}{3}$ oz.); carbohydrates, 150 gm. (5 oz.); calories, 1900.

¹ F. P. Kinnicutt.

TYPHOID FLUID DIET (No. 2)¹

(Lower Protein)

- 8 A. M.: Milk and coffee, each 120 c.c. (4 oz.).
 10 A. M.: Milk, hot or cold, 240 c.c. (8 oz.).
 12 NOON: Oatmeal gruel, 120 c.c. (4 oz.), with milk,
 60 c.c. (2 oz.).
 2 P. M.: Junket with cane- and milk-sugar.
 4 P. M.: Oatmeal gruel, 120 c.c. (4 oz.), with milk, 60
 c.c. (2 oz.).
 6 P. M.: Junket with cane- and milk-sugar.
 8 P. M.: Hot milk, 240 c.c. (8 oz.).
 10 P. M.: Whey, 180 c.c., with one whole egg and sherry.
 12 P. M.: Oatmeal gruel, 120 c.c. (4 oz.), with milk,
 60 c.c. (2 oz.).
 2 A. M.: Junket with cane- and milk-sugar.
 4 A. M.: Milk, 240 c.c. (8 oz.).
 6 A. M.: Milk, 240 c.c. (8 oz.).
 15 gm. ($\frac{1}{2}$ oz.) of lactose added to the four milk
 feedings.

Approximate Values

Protein, 71 gm. ($2\frac{1}{3}$ oz.); fat, 81 gm. ($2\frac{2}{3}$ oz.); carbo-
 hydrates, 160 gm. ($5\frac{1}{3}$ oz.); calories, 2300.

These typhoid fluid diets can be further augmented by
 the addition of the following articles:

Lactose or cane-sugar, 30 gm. (1 oz.), 120 calories.

¹ F. P. Kinnicutt.

Pea soup (see Special Recipes), 180 c.c. (1 cup, 6 oz.),
192 calories (7.5 gm. protein).

Bean soup (see Special Recipes), 180 c.c. (1 cup, 6 oz.),
242 calories (12 gm. protein).

Soda cracker (one), 30 calories (.5 gm. protein).

Cream.....	100 c.c. ($3\frac{1}{8}$ oz.).	} 500 calories.
Sugar or lactose..	60 gm. (2 oz.).	
Gruel.....	150 c.c. (5 oz.).	

This adds protein, 5 gm. ($\frac{1}{8}$ oz.); fat, 20 gm. ($\frac{3}{8}$ oz.);
carbohydrates, 75 gm. ($2\frac{1}{2}$ oz.).

TYPHOID DIET WITHOUT MILK

6.30 A. M.: Cup of hot coffee, sugar 8 gm. (3 ii), two
slices zweibach or toast (softened), butter.

8.30 A. M.: One portion of oatmeal or Robinson's
prepared barley. Six buttered crackers
or saltines.

10.30 A. M.: Soup, various kinds, 180 c.c. (6 oz.)
One soft egg.

12.30 P. M.: One medium sized baked potato mashed
and prepared with butter and salt. Cup
of hot, weak tea with sugar, 8 gm. (3 ii).

2.30: Two tablespoons of pudding—tapico or bread.
Six saltines and butter. One soft egg.

4.30: Rice, farina or cream of wheat, 60 gm. (2 oz.),
with butter, 30 gm. (1 oz.) and sugar, 15
gm. ($\frac{1}{2}$ oz.).

6.30: Three slices buttered toast. One soft egg.

8.30: Soup, 180 c.c. (6 oz.).

Approximate Values

Protein, 72 gm. ($2\frac{1}{3}$ oz.); fat, 126 gm. (4 oz.); carbohydrate, 346 gm. (12 oz.); calories, 2660.

MODIFIED MILK FLUID DIETS¹

For 1000 calories a day:

	Calories
Milk, 1000 c.c. (1 quart).....	700
Cream, 50 c.c. ($1\frac{2}{3}$ oz.).....	100
Lactose, 50 gm. ($1\frac{2}{3}$ oz.).....	200

This furnishes eight feedings, each containing:

Milk, 120 c.c. (4 oz.).....	80
Cream, 8 gm. (2 dr.).....	15
Lactose, 6 gm. ($1\frac{1}{2}$ dr.).....	24

For 1500 calories a day:

Milk, 1500 c.c. ($1\frac{1}{2}$ quarts).....	1000
Cream, 50 c.c. ($1\frac{2}{3}$ oz.).....	100
Lactose, 100 gm. ($3\frac{1}{3}$ oz.).....	400

This furnishes six feedings, each containing:

Milk, 240 c.c. (8 oz.).....	160
Cream, 8 gm. (2 dr.).....	15
Lactose, 16 gm. (4 dr.).....	64

¹ Cole man, American Journal of Medical Sciences, January, 1912.

For 2000 calories a day:

Milk, 1500 c.c. (1½ quarts).....	1000
Cream, 240 c.c. (8 oz.).....	500
Lactose, 120 gm. (4 oz.).....	500

This furnishes seven feedings, each containing:

Milk, 210 c.c. (7 oz.).....	140
Cream, 30 c.c. (1 oz.).....	60
Lactose, 18 gm. (4½ dr.).....	72

For 2500 calories a day:

Milk, 1500 c.c. (1½ quarts).....	1000
Cream, 240 c.c. (8 oz.).....	500
Lactose, 240 gm. (8 oz.).....	1000

This furnishes seven feedings, each containing:

Milk, 210 c.c. (7 oz.).....	140
Cream, 30 c.c. (1 oz.).....	60
Lactose, 36 gm. (9 dr.).....	144

For 3000 calories a day:

Milk, 1500 c.c. (1½ quarts).....	1000
Cream, 480 c.c. (1 pint).....	1000
Lactose, 240 c.c. (8 oz.).....	1000

This furnishes eight feedings, each containing:

Milk, 180 c.c. (6 oz.).....	120
Cream, 60 c.c. (2 oz.).....	120
Lactose, 30 gm. (1 oz.).....	120

For 3900 calories a day:

Milk, 1500 c.c. (1½ quarts).....	1000
Cream, 480 c.c. (1 pint).....	1000
Lactose, 480 gm. (16 oz.).....	1900

This furnishes eight feedings, each containing:

Milk, 180 c.c. (6 oz.).....	120
Cream, 60 c.c. (2 oz.).....	120
Lactose, 60 gm. (2 oz.).....	240

TYPHOID SOFT DIET¹

Use cream, 40 per cent. (16 oz.), for each patient (Q. D.):

	Calories
6.00 A. M. to 8.00 P. M.: Pasteurized milk, 180 c.c. (6 oz.).....	120
Cream, 30 c.c. (1 oz.).....	100
Each glass.....	220
Q. 2 H. Eight glasses.....	1760

Breakfast.

	Calories
1 soft-boiled egg.....	60
2 tablespoonfuls hominy or farina (well cooked).....	100
With milk, 90 c.c. (3 oz.).....	60
With cream, 60 c.c. (2 oz.).....	200
	420

Dinner.

	Calories
Beef-juice, scraped beef, each 30 c.c. (1 oz.).....	50
Oatmeal gruel, 240 c.c. (8 oz.).....	100
With cream, 60 c.c. (2 oz.).....	200
3 tablespoonfuls ice-cream.....	200
	550

¹ L. A. Conner, New York Hospital Diets.

Supper.

	Calories
1 soft-boiled egg.....	60
3 tablespoonfuls wine-jelly or custard, or oat-meal gruel, 240 c.c. (8 oz.).....	100
With cream, 60 c.c. (2 oz.).....	300
	460

Approximate values of this diet are protein, 101 gm. ($3\frac{1}{3}$ oz.); carbohydrate, 172 gm. ($5\frac{2}{3}$ oz.); fat, 176 gm. (6 oz.); calories, 3190.

COMMENTS ON TYPHOID FEVER DIET

Many cases of typhoid when seen for the first time, either in the hospital or private practice, have been ill for a number of days, and are very apt to have a diarrhea, which is not, strictly speaking, a part of their disease, but a complication, brought on by improper feeding. In such cases it is best, after the initial emptying of the intestinal canal by mild catharsis or enemata, to prescribe a diet which, while it is too low in heat units, still has a fair amount of protein, and has an added advantage over a strictly milk diet in that it is quite varied in composition. Such a diet is given in the typhoid liquid diets, and, while one could often advantageously give the ordinary fluid diet for this period, the special typhoid liquid diet furnishes almost twice as much protein and twice as many calories.

When the patient is ready for more food this list of

articles can be further reinforced by the addition of cream, lactose, eggs, and more gruel, or one can make use of one of the cream, milk, and lactose mixtures given in the diet lists devised by Dr. Warren Coleman. There is, however, a distinct advantage in the greater variety of foods in the first list, and it has been the experience of many that it is better borne. In early convalescence the soft typhoid diet will be found convenient, as representing a good amount of protein and a larger number of calories without irritating or coarse residue. There is apparently no question among clinicians nowadays that typhoid patients do better on a more liberal supply and variety of foods than on a monotonous and insufficient milk diet—complications are fewer (?) and convalescence is shortened. Coleman and Schaefer have ably demonstrated that the body is able, even in high fever, to digest, absorb, and properly utilize quantities of food sufficiently large to maintain nitrogenous equilibrium and body weight, their cases often actually gaining weight during the fever.

There never was a class of patients, however, who needed more individual care in the selection of the kind and quantity of food given than typhoid fever patients, and, while the high caloric feeding is a great step in advance, it must be individualized for the patient and always arrived at gradually; *i.e.*, it is not well to go from a low caloric to a high caloric diet without a gradual increase from one to the other.

Just here it might be added that when a patient's digestion fails to take care of the larger amounts of food, as shown by tympanites, flatulence, etc., the use of buttermilk or milk artificially ripened by some form of the lactic acid bacillus (see Special Recipes), if given in moderate amount wherever fresh milk is being used, will often stop the intestinal fermentation at once. It is almost as useful when a patient's stomach becomes disturbed, as shown by nausea or vomiting.

In some cases where the tympanites is severe, it may be necessary to withhold all food for a time or to restrict the diet to broths. There are also certain patients who cannot take milk in any form without distressing disturbances. In these latter cases a diet without milk may be arranged somewhat as shown, regulating the amount of protein and the number of calories according to the demands of the case.

The transition from typhoid soft to convalescent diet is easily made, although fruits and green vegetables should be excluded at first. Patients should usually be wakened for feedings.

DIET IN PNEUMONIA

- 8 A. M.: Milk, coffee, 120 c.c. each (4 oz.), 240 c.c. (8 oz.). (If coffee disagrees, the milk may be flavored with tea or cocoa.)
- 10 A. M.: Gruel, any form, 120 c.c. (4 oz.) with milk, 180 c.c. (6 oz.).
- 12 NOON: Milk, hot or cold, or as junket, 240 c.c. (8 oz.). Add salt.
- 2 P. M.: Same as 10 A. M.
- 4 P. M.: Same as NOON.
- 6 P. M.: Custard with lactose, 1 cup (4 oz.).
- 8 P. M.: Milk, 240 c.c. (8 oz.).
- 10 P. M.: Whey, 180 c.c. (6 oz.) with one whole egg, sherry flavor, 15 c.c. ($\frac{1}{2}$ oz.).
- 12 P. M.: Gruel as at 10 A. M.
- 2 A. M.: Milk, 240 c.c. (8 oz.) in any form preferred.
- 4 A. M.: Whey, 180 c.c. (6 oz.) or hot milk, 240 c.c. (8 oz.).
- 6 A. M.: Milk, 240 c.c. (8 oz.).

This represents approximately:

Protein, 90 gm. (3 oz.); fat, 90 gm. (3 oz.); carbohydrates, 225 gm. ($7\frac{1}{2}$ oz.); calories, 1800.

The caloric value of this diet may be increased by adding 120-240 c.c. cream (4-8 oz.).

If milk disagrees for any reason, buttermilk or ripened milk may be substituted, or the typhoid diet without milk may be tried. Broth may be given in addition as it is good for its appetizing qualities, although of little nutritional value.

COMMENT ON PNEUMONIA

Pneumonia being for the most part a self-limited and comparatively short disease, the need for absolute dietary regulation from the nutritional standpoint is not always necessary and one must often be content to do the best one can, so far as feeding definite amounts of food goes. Care must be taken not to give those foods which are prone to fermentation or tend to the production of gas, as abdominal distention is to be avoided, when possible, at all costs. At the same time these patients should receive food regularly and in fair amount, although not necessarily up to ordinary nutritional requirements. One absolute requirement in these cases is an abundance of water and a pitcher of this should always be at hand. The use of fruit juices diluted with water is an excellent practice, orange juice, lemon juice, or grape juice are particularly grateful. One of the typhoid liquid diets would form the basis of a very good feeding routine in Pneumonia or that already given. The patient should not be wakened.

NEPHRITIC DIETS

SALT-POOR DIETS

SALT-POOR DIET, NO. 1

<i>Breakfast.</i>	Gm.	Oz.
Bread.....	30	1
Sugar.....	10	$\frac{1}{3}$
Farina.....	60	2
Butter.....	30	1
Egg (1).....	40	$1\frac{1}{3}$
Coffee.....	150 C.C.	5
	320	$10\frac{2}{3}$
<i>Dinner.</i>	Gm.	Oz.
Bread.....	30	1
Butter.....	20	$\frac{2}{3}$
Sugar.....	10	$\frac{1}{3}$
Rice.....	60	2
Farina.....	100	$3\frac{1}{3}$
Tea.....	150 C.C.	5
	370	$12\frac{1}{3}$
<i>Supper.</i>	Gm.	Oz.
Egg (1).....	40	$1\frac{1}{3}$
Toast.....	15	$\frac{1}{2}$
Bread.....	30	1
Butter.....	15	$\frac{1}{2}$
Custard.....	100	$3\frac{1}{3}$
Prunes.....	60	2
Tea.....	180 C.C.	6
	440	$14\frac{2}{3}$

This contains chlorids, 1 gm.; protein, 35 gm. ($1\frac{1}{6}$ oz.); fat, 65 gm. ($2\frac{1}{6}$ oz.); carbohydrate, 140 gm. ($4\frac{2}{3}$ oz.); calories, 1300.

SALT-POOR DIET, NO. 2

<i>Breakfast.</i>	Gm.	Oz.
Bread.....	60	2
Sugar.....	40	$1\frac{1}{3}$
Farina.....	60	2
Butter.....	35	$1\frac{1}{6}$
Egg (1).....	40	$1\frac{1}{3}$
Coffee.....	150 c.c.	5
	385	$12\frac{5}{6}$
<i>Dinner.</i>	Gm.	Oz.
Egg (1).....	40	$1\frac{1}{3}$
Bread.....	60	2
Butter.....	30	1
Rice.....	70	$2\frac{1}{3}$
Farina.....	100	$3\frac{1}{3}$
Tea.....	150 c.c.	5
	450	15
<i>Supper.</i>	Gm.	Oz.
Egg (1).....	40	$1\frac{1}{3}$
Toast.....	15	$\frac{1}{2}$
Bread.....	60	2
Butter.....	30	1
Custard.....	100	$3\frac{1}{3}$
Prunes.....	60	2
Tea.....	180 c.c.	6
	485	$15\frac{5}{6}$

This contains chlorids, 1.3 gm.; protein, 50 gm. (1 $\frac{2}{3}$ oz.); fat, 100 gm. (3 $\frac{1}{3}$ oz.); carbohydrate, 240 gm. (8 oz.); calories, 2100.

[SALT-POOR DIET, NO. 3

<i>Breakfast.</i>	Gm.	Oz.
Bread.....	30	1
Egg.....	1	
Oatmeal.....	60	2
Orange juice	200 c.c.	6 $\frac{2}{3}$
Sugar.....	25	$\frac{5}{6}$
Butter.....	20	$\frac{2}{3}$
Cream.....	50	1 $\frac{2}{3}$

<i>Luncheon.</i>	Gm.	Oz.
Potato.....	50	1 $\frac{2}{3}$
Bread.....	30	1
Rice	80	2 $\frac{2}{3}$
Tomato.....	100	3 $\frac{1}{3}$
Butter.....	20	$\frac{2}{3}$
Raisins.....	15	$\frac{1}{2}$
Sugar	10	$\frac{1}{3}$
Ice-cream.....	100	3 $\frac{1}{3}$

<i>Supper.</i>	Gm.	Oz.
Bread.....	40	1 $\frac{1}{3}$
Butter.....	30	1
Oatmeal.....	60	2
Cream.....	50	1 $\frac{2}{3}$
Raisins.....	10	$\frac{1}{3}$
Sugar.....	35	1
Potato.....	50	1 $\frac{2}{3}$
Egg (1)		

Approximate Values

Protein, 37 gm. ($1\frac{1}{6}$ oz.); (5.9 gm. nitrogen); calories, 2000; chlorids less than 1 gm. (15 grains).

SALT-POOR DIET, NO. 4

<i>Breakfast.</i>		Gm.	Oz.
Bread.....	60		2
Orange juice.....	200 c.c.		$6\frac{2}{3}$
Butter.....	40		$1\frac{1}{2}$
Cream.....	30		1
Farina.....	50		$1\frac{2}{3}$
Sugar.....	30		1
Coffee or tea.....	180 c.c.		6
<i>Dinner.</i>		Gm.	Oz.
Bread.....	40		1
Butter.....	20		$\frac{2}{3}$
Egg.....	1		1
Potato.....	125		4
Cream cheese.....	20		$\frac{2}{3}$
Sugar.....	30		1
Rice.....	50		$1\frac{2}{3}$
Cream.....	30		1
<i>Supper.</i>		Gm.	Oz.
Bread.....	50		$1\frac{2}{3}$
Butter.....	35		1
Farina.....	50		$1\frac{2}{3}$
Cream.....	40		$1\frac{1}{3}$
Cream cheese.....	30		1
Olive oil.....	15		$\frac{1}{2}$
Lactose.....	8		$\frac{1}{4}$
Sugar.....	30		1
Potato.....	75		$2\frac{1}{2}$

Approximate Values

Protein, 35 (1 $\frac{1}{8}$ oz.); (5.6 gm. nitrogen); calories, 2600; chlorids, less than 1 gm. (15 grains).

May have, in addition, moderate amounts of: tomatoes, celery, lettuce, cabbage, cauliflower, spinach (fresh), beets, carrots, squash, oranges, grape fruit, peaches, grapes, prunes, apricots, pears, melons, and jams.

SALT-POOR DIET, NO. 5

<i>Breakfast.</i>		Gm.	Oz.
Bread.....	60	2	
Orange juice.....	200	6 $\frac{2}{3}$	
Butter.....	30	1	
Eggs.....	2		
Oatmeal.....	90	3	
Prunes.....	50	1 $\frac{2}{3}$	
Cream.....	40	1 $\frac{1}{3}$	
Sugar.....	50	1 $\frac{2}{3}$	
Tea or coffee.....	150 C.C.	5	
<i>Dinner.</i>		Gm.	Oz.
Bread.....	40	1 $\frac{1}{3}$	
Butter.....	10	$\frac{1}{3}$	
Potato.....	80	2 $\frac{1}{3}$	
Meat, choice of			
Lamb chop or.....	100	3 $\frac{1}{3}$	
Sirloin steak or.....	100	3 $\frac{1}{3}$	
Fish or.....	70	1 $\frac{1}{3}$	
Chicken.....	125	4	
Rice.....	80	2 $\frac{2}{3}$	
Cream.....	20	$\frac{2}{3}$	
Vegetables—from list.			

<i>Supper.</i>	Gm.	Oz.
Bread.....	50	1 $\frac{2}{3}$
Butter.....	30	1
Cream.....	40	1 $\frac{1}{3}$
Lactose.....	8	$\frac{1}{3}$
Oatmeal.....	30	1
Prunes.....	100	3 $\frac{1}{3}$
Olive oil.....	20	$\frac{2}{3}$
Egg.....	2	1
Sugar (cane).....	30	5
Tea.....	150	5

Approximate Values

Protein, 69 gm. ($2\frac{1}{3}$ oz.); nitrogen, 11 gm. ($\frac{1}{3}$ oz.); chlorids, 1 gm. (15 grains); calories, 3000.

The same list of accessory fruits and vegetables that was given with Diet No. 4 is available here.

These diets are intended to be palatable, low-protein, salt-poor diets and, therefore, too great liberality of choice is given to permit of a very considerable accuracy in estimating the nitrogen and salt. Since these diets are for therapeutic rather than investigative use, the patients need not be required to finish each portion but they should be encouraged to eat the full amount when they can do so with moderate comfort. Diets 4 and 5 consist of a constant framework and a list of accessory foods that may be varied at will. The diets can be distributed throughout the day to suit the convenience of the nurse and patient. These foods must, of course, be prepared and served without salt.

NOTE.—The next step after salt-poor diet No. 5 would be soft or convalescent diet served without salt shaker, but cooked with a palatable amount of salt.

DIRECTIONS FOR SCHLAYER'S NEPHRITIC TEST DAY
(MOSENTHAL)

Needed in the ward:

7 wide-necked bottles, each labelled.

1 bottle to hold 1000 c.c. for night specimen.

6 bottles to hold 500 c.c. each, for two-hour specimens during day.

Salt in capsules, each capsule to contain 2.3 grams sodium chlorid.

Preceding day's diet should be soft salt-poor with fluids limited to 1500 c.c.

Test Day.—All food is to be salt-free, from diet kitchen.

Salt for each meal will be furnished in weighed amounts (one capsule containing 2.3 grams, sodium chlorid with each meal).

All food or fluid not taken must be weighed or measured after meals and charted.

Allow no food or fluid of any kind except at meal times as directed.

Note any mishap or irregularities that occur in giving the diet or in collection of specimens.

Meals to be given at the following hours:

Breakfast, 7.45 A. M.

Dinner, 11.45 A. M.

Supper, 4.45 P. M.

No fluids between meals or during the night.

Collection of urine during the day every two hours, and from 7.45 P. M. to 7.45 A. M.

Empty bladder at the following times:

No. of specimen	7.45 A. M. discard.
1	9.45 A. M. save in separate bottle.
2	11.45 A. M. save in separate bottle.
3	1.45 P. M. save in separate bottle.
4	3.45 P. M. save in separate bottle.
5	5.45 P. M. save in separate bottle.
6	7.45 P. M. save in separate bottle.
7	7.45 P. M. to 7.45 A. M.

Label each bottle with period of collection, number of specimen and name of patient and send to laboratory.

Breakfast: 7.45 A. M. Chart food or fluid not taken.

Boiled oatmeal, 100 grams ($3\frac{1}{3}$ oz.); sugar, one-half teaspoonful.

Milk, 30 c.c. (1 oz.).

Two slices of bread (30 grams each) (1 oz.);
butter, 20 grams ($\frac{2}{3}$ oz.).

Coffee, 160 c.c. ($5\frac{1}{3}$ oz.); milk, 40 c.c. ($1\frac{1}{3}$ oz.);
sugar, one teaspoonful.

Milk, 200 c.c. ($6\frac{2}{3}$ oz.).

Water, 200 c.c. ($6\frac{2}{3}$ oz.).

Dinner; 11.45 A. M.

Meat soup, 180 c.c. (6 oz.).

Beefsteak, 100 grams ($3\frac{1}{3}$ oz.).

Potatoes (baked, mashed or boiled), 130 grams
($4\frac{1}{3}$ oz.).

Green vegetables as desired.

Two slices bread (30 grams each) (1 oz.); butter,
20 grams ($\frac{2}{3}$ oz.).

Tea, 180 c.c. (6 oz.); milk, 20 c.c. ($\frac{2}{3}$ oz.); sugar, one teaspoonful.

Water, 250 c.c. ($8\frac{1}{3}$ oz.).

Pudding, (tapioca or rice), 110 grams ($3\frac{2}{3}$ oz.).

Supper: 4.45 P. M.

Two eggs (cooked in any style).

Two slices of bread (30 grams each) (1 oz.); butter, 20 grams ($\frac{2}{3}$ oz.).

Tea, 180 c.c. (6 oz.); milk, 20 c.c. ($\frac{2}{3}$ oz.); sugar, one teaspoonful.

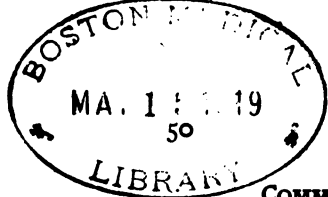
Fruit, stewed or fresh, one portion.

One capsule of salt with each meal 3×2.3 grams.

URINARY FINDINGS IN A CASE OF CHRONIC HYPERTENSIVE NEPHRITIS

Time	Urine, amount c.c.	Sp. gv.	Sodium chlorid		Nitrogen		Approximate intake
			Per cent.	Total	Per cent.	Total	
7.45 to 9.45	150	1011	.....	.....	.....	.....	Fluids 1700 c.c. Salt 10 gm. Nitrogen 15 gm.
9.45 to 11.45	102	1014	.....	.....	.....	.....	
11.45 to 1.45	90	1013	.....	.....	.....	.....	
1.45 to 3.45	263	1010	.....	.....	.....	.....	
3.45 to 5.45	60	1011	.....	.....	.....	.....	
5.45 to 7.45	320	1015	.....	.....	.....	.....	
Total day....	985	.....	0.15	1.47	0.37	3.63	
Total night..	800	1013	0.2	1.6	0.48	3.85	
Total 24 hours	1785	.....	.....	3.07	.....	7.49	
Intake.....	1700	.....	.....	10.0	.....	15.0	
Balance....	-85	.....	.....	+6.93	.....	+7.51	

These figures show a negative water balance, but retention of chlorids and nitrogen.



SALT-POOR DIETS

COMMENTS ON USE OF SALT-POOR DIETS¹

In the use of salt-poor diets, or so-called salt-"free" diets (although none of them can be actually salt free), a great step in advance has been made in the dietetic treatment of edema, particularly, but not exclusively, of renal origin. We are more indebted to Widal than to any other one man for putting this therapeutic measure on a firm basis. Of course, it is particularly useful in edema associated with a greater or lesser degree of impermeability of the kidney to salt. The two requisites for the successful use of this form of treatment are, proper selection of cases and the continued and faithful use of a diet that is as nearly salt free as possible. In other words, while the edema in many cases of this kind begins to clear up at once on this diet (although it has resisted all other physical and medical measures), in many of them it does not, and it is not until the patients have been on this diet for a week or two or longer that apparently the kidneys, having been spared so long, are able to regain their lost power of salt excretion, and will then go ahead and rapidly empty the subcutaneous tissue of its retained salt and water.

While it is best to determine the rapidity of the salt elimination in cases in which the edema resists the dietary, so that one can be assured that one is on the

¹ In all the salt-poor diets the food should be prepared absolutely without addition of salt. Salt-free butter and bread only are to be used. No extra salt allowed.

right track, a clinical diagnosis can often be made when the edema is diminished promptly. While, as already stated, this treatment is particularly indicated in a special class of renal disease, it is of great assistance in many forms of edema or even serous effusions. This is due no doubt to the fact that the kidneys are spared extra labor in the excretion of the usual amount of salt taken with the normal diet, and to the fact that the body, in the presence of a reduced salt intake, seeks salt in the tissues or serous spaces in order to keep up the normal salt concentration in the blood, as an attempt at equilibrium of the inorganic constituents of the blood is in some way automatically arranged for.

With this foreword, the use of the salt-poor diets becomes evident and needs little or no further explanation.

Diet No. 1 may be used at once in very severe cases. In milder cases No. 2, No. 3 No. 4 or No. 5 may be used, or they may be used in series as the individual case shows improvement. The length of time each should be used is a matter for judgment on the physician's part. Later, ordinary mixed diet may be used without the use of a salt shaker, after which definite amounts of salt may be allowed.

DIET IN ARTERIOSCLEROSIS AND HYPERTENSION

Much has been written during the past few years relative to the effect of foods on the production of arteriosclerosis, and hypertension, but as yet our knowledge is very incomplete. It seems fairly definitely established, however, that a great excess of food over and above the individual requirements plays a definite etiologic rôle, and it is certainly a frequent clinical observation that those who habitually overeat are often affected with these conditions separately or together.

There seems a consensus of opinion that an excess of meat or meat products plays a part in these diseases and this is not an unreasonable assumption as the extractives of meat have definite blood pressure raising qualities. Whether it is true that persons become sensitized to meat proteins or other proteins, which then exert an effect on the blood-vessels, either causing sclerosis or hypertension, has some foundation in experimental medicine, but is not as yet a settled question. On this basis Bishop devised what is called the *few protein* diet in which proteins are used qualitatively, and an attempt is made to determine the effect of the different proteins on the circulation, specially with reference to animal proteins.

As already indicated as yet it is not possible to prescribe a diet definitely to combat these conditions of arteriosclerosis and hypertension, but certain general rules may be followed to advantage by these cases.

1. Eat moderate amounts only—no more than is required to meet physiological requirements of occupation.

2. Avoid soups made with "stock." Eat meat not more than once a day and in small amount; boiled meat contains less of the extractives which are definitely pressure raising. In other words, restrict the purine intake, and take not over 60-70 gm. protein per day.

3. Avoid fermentable foods, but take foods with a fair amount of roughage.

4. Restrict the diet when necessary to meet conditions of disease of the liver, heart, kidneys, or gastrointestinal tract.

5. Exercise regularly to promote proper utilization of the foods.

6. Avoid severe or long-continued, arduous physical, or mental work.

7. Keep the skin, bowels and kidneys active, naturally if possible, artificially if necessary.

KARELL TREATMENT FOR ANASARCA¹

For First Five to Seven Days

8, 12 A. M.; 4, 8 P. M.: Milk, 200 c.c.

No other fluids.

¹ From the New York Hospital Diet Lists.

Eighth Day

Milk as above.

10 A. M.: 1 soft-boiled egg.

6 P. M.: 2 pieces of dry toast.

Ninth Day

Milk as above.

10 A. M.: 1 soft-boiled egg and 2 pieces of dry toast.

6 P. M.: 1 egg and 2 pieces of dry toast.

Tenth Day

Milk as above.

12 NOON.: Chopped meat, rice boiled in milk, vegetables.

6 P. M.: 1 soft-boiled egg.

Eleventh to Twelfth Days

Same as tenth day.

No salt is used throughout diet. Salt-free toast and butter used. Small amount of cracked ice allowed with diet. All meat can often advantageously be omitted.

COMMENTS ON CARDIAC DIETS

During the early period of cardiac decompensation the diet should be reduced to a point somewhat below the ordinary requirements of the individual in health, and care should be taken that foods prone to produce gas or in themselves indigestible are omitted from such a diet, *i.e.*, cakes, syrups, uncooked vegetables and

fruits, fried foods, cabbage, cauliflower, sprouts, etc. When there is marked decompensation with congestion of the viscera, the simplest sort of a diet is in order, such as the soft diet and the salt-poor diets or when especially marked and particularly when accompanied by obesity, the Karell diet is of great value. The evening meal should always be light or of small bulk in decompensation and particularly in chronic myocarditis. The Karell diet used in marked decompensation is almost too well known to need comment, and has proven its usefulness during many years, the limitation of the fluid intake together with the low food and minimal salt content seem to explain its action, while at the same time a moderate amount of protein is furnished. Ordinary soft diet or the salt-poor diets may also be used to advantage.

GASTRIC DIETS

LENHARTZ DIET

As eggs differ in size and weight, take the total of eggs for the day of diet; beat, measure, and divide into seven feedings and put into medicine-glasses. Keep on ice and use as directed, alternating with milk.

Milk, iced, kept in bowl of cracked ice. Eggs beaten up raw and iced. Spoon kept in bowl of ice.

Patients never allowed to help themselves.

Slow feedings essential, frequent small feedings fed by spoon.

First and second days salt eggs to taste.

Third day sugar is started.

First Day

7 A. M.: Egg.

8 A. M.: Milk, 20 c.c. ($\frac{2}{3}$ oz.).

9 A. M.: Egg.

10 A. M.: Milk, 20 c.c. ($\frac{2}{3}$ oz.).

11 A. M.: Egg.

12 NOON: Milk, 15 c.c. ($\frac{1}{2}$ oz.).

1 P. M.: Egg.

2 P. M.: Milk, 15 c.c. ($\frac{1}{2}$ oz.).

3 P. M.: Egg.

4 P. M.: Milk, 15 c.c. ($\frac{1}{2}$ oz.).

5 P. M.: Egg.

6 P. M.: Milk, 15 c.c. ($\frac{1}{2}$ oz.).

7 P. M.: Egg.

Total First Day.—Eggs (raw), 2; milk, 100 c.c. ($3\frac{1}{3}$ oz.).

Second Day

7 A. M.: Egg.

8 A. M.: Milk, 35 c.c. (1 oz.).

9 A. M.: Egg.

10 A. M.: Milk, 35 c.c. (1 oz.).

11 A. M.: Egg.

12 NOON: Milk, 35 c.c. (1 oz.).

1 P. M.: Egg.

2 P. M.: Milk, 35 c.c. (1 oz.).

3 P. M.: Egg.

4 P. M.: Milk, 30 c.c. (1 oz.).

5 P. M.: Egg.

6 P. M.: Milk, 30 c.c. (1 oz.).

7 P. M.: Egg.

Total Second Day.—Eggs (raw), 3; milk, 200 c.c. ($6\frac{2}{3}$ oz.).

Third Day

7 A. M.: Egg.

Sugar, 2 gm. ($\frac{1}{2}$ dr.).

8 A. M.: Milk, 50 c.c. ($1\frac{2}{3}$ oz.).

9 A. M.: Egg.

Sugar, 3 gm. ($\frac{3}{4}$ dr.).

10 A. M.: Milk, 50 c.c. ($1\frac{2}{3}$ oz.).

11 A. M.: Egg.

Sugar, 3 gm. ($\frac{3}{4}$ dr.).

12 NOON: Milk, 50 c.c. ($1\frac{2}{3}$ oz.).

1 P. M.: Egg.

Sugar, 3 gm. ($\frac{3}{4}$ dr.).

2 P. M.: Milk., 50 c.c. ($1\frac{2}{3}$ oz.).

3 P. M.: Egg.

Sugar, 3 gm. ($\frac{3}{4}$ dr.).

4 P. M.: Milk, 50 c.c. ($1\frac{2}{3}$ oz.).

5 P. M.: Egg.

Sugar, 3 gm. ($\frac{3}{4}$ dr.).

6 P. M.: Milk, 50 c.c. ($1\frac{2}{3}$ oz.).

7 P. M.: Egg.

Sugar, 3 gm. ($\frac{3}{4}$ dr.).

Total Third Day.—Eggs (raw), 4; milk, 300 c.c. (10 oz.); sugar, 20 gm. (5 dr.).

This will suffice to show the arrangement of the foods and intervals of feeding in the Lenhartz diet, the total daily quantities being given under the recapitulation.

RECAPITULATION OF LENEHARTZ DIET

Day	Cal- ories	Eggs	Milk	Sugar	Scraped beef	Boiled rice	Zwieback	Butter	Chicken
1	280	Raw 2	100 c.c. ($3\frac{1}{2}$ oz.)						
2	470	Raw 3	200 c.c. ($6\frac{1}{2}$ oz.)						
3	637	Raw 4	300 c.c. (10 oz.)	20 gm. ($\frac{5}{8}$ dr.)					
4	777	Raw 5	400 c.c. (13 $\frac{1}{2}$ oz.)	20 gm. (5 dr.)					
5	966	Raw 6	500 c.c. (16 $\frac{1}{2}$ oz.)	30 gm. (1 oz.)	36 gm. (9 dr.)				
6	1135	Raw 7	600 c.c. (20 oz.)	30 gm. (1 oz.)	70 gm. (2 $\frac{1}{2}$ oz.)				
7	1380	Raw 4, soft 4	700 c.c. (23 $\frac{1}{2}$ oz.)	40 gm. (1 $\frac{1}{2}$ oz.)	100 gm. ($3\frac{1}{2}$ oz.)				
8	1720	Raw 4, soft 4	800 c.c. (26 $\frac{1}{2}$ oz.)	40 gm. (1 $\frac{1}{2}$ oz.)	100 gm. ($3\frac{1}{2}$ oz.)		20 gm. ($\frac{3}{4}$ oz.)		
9	2138	Raw 4, soft 4	900 c.c. (30 oz.)	40 gm. (1 $\frac{1}{2}$ oz.)	200 gm. ($6\frac{1}{2}$ oz.)		40 gm. (1 $\frac{1}{4}$ oz.) or toast, 20 gm. ($\frac{3}{8}$ oz.)		
10	2478	Raw 4, soft 4	1000 c.c. (33 $\frac{1}{2}$ oz.)	40 gm. (1 $\frac{1}{2}$ oz.)	200 gm. ($6\frac{1}{2}$ oz.)		40 gm. (1 $\frac{1}{4}$ oz.) or toast, 20 gm. ($\frac{3}{8}$ oz.)	20 gm. ($\frac{3}{4}$ oz.)	50 gm. (1 $\frac{3}{4}$ oz.)
11	2941	Raw 4, soft 4	1000 c.c. (33 $\frac{1}{2}$ oz.)	40 gm. (1 $\frac{1}{2}$ oz.)	70 gm. (2 $\frac{1}{2}$ oz.)	300 gm. (10 oz.)	60 gm. (2 oz.)	40 gm. (1 $\frac{1}{4}$ oz.)	50 gm. (1 $\frac{3}{4}$ oz.)
12	2941	Raw 4, soft 4	1000 c.c. (33 $\frac{1}{2}$ oz.)	40 gm. (1 $\frac{1}{2}$ oz.)	70 gm. (2 $\frac{1}{2}$ oz.)	300 gm. (10 oz.)	80 gm. (2 $\frac{3}{4}$ oz.)	40 gm. (1 $\frac{1}{4}$ oz.)	50 gm. (1 $\frac{3}{4}$ oz.)
13	3007	Raw 4, soft 4	1000 c.c. (33 $\frac{1}{2}$ oz.)	40 gm. (1 $\frac{1}{2}$ oz.)	70 gm. (2 $\frac{1}{2}$ oz.)	300 gm. (10 oz.)	80 gm. (2 $\frac{3}{4}$ oz.)	40 gm. (1 $\frac{1}{4}$ oz.)	50 gm. (1 $\frac{3}{4}$ oz.)
14	3007	Same	as the thirteenth day.						

VON LEUBE TREATMENT FOR PEPTIC ULCER¹

For the first three days neither food nor water is to be taken by mouth, the mouth being kept moist by washes. The Murphy drip is started at once, using a 2 per cent. glucose solution giving about 30 drops per minute. This supplies approximately 1500 c.c. (3 pints) of fluid in twenty-four hours. It is well to add 50 grains (3.3 gm.) of strontium bromid to this, and continue the drip for five or six days until the patients are receiving sufficient fluid by mouth. In patients who are aged, debilitated, or desiccated by vomiting and insufficient nourishment, the first period of starvation is limited to twenty-four hours. On the second day 2 to 4 ounces of Celestine Vichy is given every two hours, and on the third day alternate these doses with albumin-water, so that liquids are taken every hour.

During this time hot applications, preferably by the electric pad, are applied constantly to the epigastrium. On the fourth day from 7 A. M. to 8 P. M. there is given on one hour 2 ounces (60 c.c.) fully peptonized milk (two-hour peptonization), the next hour 2 ounces (60 c.c.) Celestine Vichy or Siphon Vichy, which has been allowed to stand until all the gas has escaped. These are alternated hourly and each day the milk and vichy allowance is increased 1 ounce (30 c.c.) each, until the milk reaches 8 ounces (250 c.c.) but the vichy

¹As modified by Geo. R. Lockwood.

is not increased after the allowance reaches 4 ounces (120 c.c.). The hot applications are still continued and the patients kept quietly in bed.

The bowels are now kept open by low, simple enemata. If there is any acidity, alkaline powders are given, but otherwise no medicine is taken. About the tenth day are added in order, fine cereal, milk-toast, and junket, and then one may begin one of two lines of treatment. If the bowels are constipated and the breath offensive, start with Carlsbad water, giving a glassful, hot, before the first nourishment. If necessary, one-half such dose is to be given the last thing at night. If the bowels still remain constipated, reduce the temperature of the Carlsbad to tepid, giving practically a Markbrunnen instead of Sprudel. If the bowels are not so constipated, and if pain and acidity have been permanent symptoms, some rely on nitrate of silver, giving $\frac{3}{6}$ grain three times a day for three days, $\frac{4}{6}$ grain for three days, and $\frac{5}{6}$ grain for three days, and then repeat the cycle. Diarrhea may follow such dosage.

During the third week are added, in order, spaghetti and macaroni, creamed mashed potato, fine cereal, such as hominy or cream of wheat, and creamed fresh fish, such as creamed halibut. Any vegetable that is put through a sieve, such as pea purée, or thick purée soups, without meat stock, may be given. Farinaceous desserts, such as farina, tapico, cornstarch, blanc-mange, rice pudding, and custard, may also be given.

The patient still remains in bed and continues the use of the hot applications. The hot applications are used regularly, except in cases with recent hemorrhage.

During the fourth week the patient begins to be up and about on the convalescent gastric diets.

SIPPY'S TREATMENT FOR PEPTIC ULCER

The patients are put to bed for from three to four weeks and then gradually allowed up, but can do no real work for a period of seven or eight weeks in all. Each morning, one-half hour before the first feeding, a dram (4 gm.) of subnitrate of bismuth is given in a little water. Feedings are given every hour from 7 A. M. to 7 P. M. consisting of equal parts of milk and cream, a total of 1 to 3 ounces (30-90 c.c.). Although acidity is best controlled by hourly feedings, some cases do well on a two, three or four hourly schedule. Half way between each feeding a powder, consisting of 10 grains (.6 gm.) each of calcined magnesia and soda bicarbonate is given alternating with another powder of 10 grains (.6 gm.) bismuth and 20 to 30 grains (1.3-2 gm.) soda bicarbonate. The magnesia is used as often as possible, as it has the highest neutralizing power for free hydrochloric acid. If diarrhea develops, use less of the magnesia powder and more of the other.

After two or three days, soft eggs and well cooked, fine cereals are added, so that at the end of ten days patients are receiving milk and cream mixture every

hour 7 A. M. to 7 P. M., three soft boiled eggs, one at a time, 9 ounces (270 gm.) of cereal, 3 ounces (90 gm.) given at each of three feedings. The extras are evenly spaced throughout the day but the total amount of each feeding should not exceed 6 ounces (180 gm.). To insure the success of this treatment absolute accurate control of the acidity must be maintained throughout the twenty-four hours. This is accomplished by testing the gastric contents frequently, early in the treatment, by the stomach tube or duodenal tube as follows.

The first day or two the tube is passed occasionally to determine the presence of free Hcl; if present in the stomach contents, the alkali powders must be increased as the treatment aims to keep the free Hcl absolutely neutralized. After the first few days this need only be done two or three times a week. It is necessary to be sure that the stomach does not contain free acid during the night, and it is necessary to give two or three alkali powders between 7 and 10 P. M. to make sure of this. At 10 o'clock the tube should be passed and any hyper-acid secretion removed. If necessary, the tube should be passed for the first few days two or three times through the night. After the first few days this is rarely necessary, the last emptying being done at 10 P. M.

In the diet, cream soups, vegetable purées, or soft foods, such as jellies, custards and creams may be

added. Farina, cream of wheat and rice cooked to a pulp are best.

During the third week soft toast, crackers, purées of potato, and other cream soups may be added. In the fourth week, the milk and cream may be made $2\frac{1}{2}$ ounces (75 c.c.) at each feeding, the feedings lengthened to two hours or after three weeks, three hourly feedings are given. The bismuth is continued for six to eight weeks and the alkaline powders for several months between feedings. For a year or more only soft unirritating foods should be taken.

MODIFIED DIET FOR PEPTIC ULCER

The essential features of both the von Leube and Sippy methods are combined, and one uses peptonized milk (peptonized two hours) instead of the milk-cream mixture as recommended by Sippy. The alkaline mixtures are used half way between feedings and two or three times at hour intervals after the 7 P. M. feeding.

This combined method reproduces medically the conditions that are sought by operation, namely a continued greatly reduced gastric acidity, and even more, real alkalinity of gastric contents, and a rapid emptying of the stomach; as Cannon has shown that fully peptonized milk leaves the stomach exceedingly rapidly.

The details of this method are as follows:

The patient is kept in bed for three weeks and the hot pad applied as in the von Leube routine. The continu-

ous Murphy drip of 2 per cent. glucose solution is also used, but nothing allowed by mouth for three days. Mouth washes are used several times a day. Feedings are begun the fourth day, consisting of 2 ounces (60 c.c.) of fully peptonized milk every hour or two hours from 7 A. M. to 7 P. M. Half way between feedings the alkaline mixture is given in 2 ounces (60 c.c.) of water as recommended by Sippy. Each day the milk is increased 1 ounce (30 c.c.), until 4 ounces (120 c.c.) are taken every hour, or 8 ounces (240 c.c.) every two hours, depending on the needs of the individual case, *i.e.*, some do best on hourly feedings; some on two hourly nourishment. The water allowance is not increased to over 3 or 4 ounces (90-120 c.c.) with the contained alkali. After eight days of feeding, a tablespoonful of well-cooked farina is allowed at first twice a day with the milk feedings which are kept up continuously. The tenth day farina, cream of wheat or wheaten are allowed with three of the milk feedings. The twelfth day the cereal is increased to two tablespoons, and a small sprinkling of powdered sugar is allowed. The fifteenth day four soft feedings are allowed evenly spaced throughout the day, milk-toast being used once. The seventeenth day a soft egg is allowed, or custard. After three weeks the feedings are arranged so as to give three soft meals at 8, 1 and 6.30 with a mid-feeding at 11 A. M. and 4 P. M. of milk with custard, junket, or cream cheese sandwich. In the fourth week creamed fresh

cod or halibut are added, cream and purée soups, mashed potato, well-cooked rice. From the end of the third week the peptonization of the milk is reduced fifteen minutes a day until plain milk is taken, but always scalded. During the entire treatment the alkaline mixtures are given in sufficient amount to maintain as nearly as possible a continuously alkaline gastric contents, testing the contents by passing a small stomach tube or a duodenal tube into the stomach, and emptying the stomach at bedtime if there is any secretion, as recommended in Sippy's method.

DIET FOR AMBULATORY CASES OF PEPTIC ULCER

The dietetic treatment of ambulatory cases of gastric or duodenal ulceration has a very distinct place in therapeutics, for many of these cases are apparently well, except for the characteristic epigastric pain which comes on at varying times after meals, and refuse the suggestion of taking an ulcer "cure," as they will not give the necessary time. These cases are often surprisingly helped if they are put on a diet for two full weeks of milk, soft-boiled eggs (one to two minutes), and cream, given somewhat as follows:

At 8 A. M., 1 P. M., and 7 P. M.: 2 glasses of milk (and cream); 2 soft-boiled eggs.

At 11 A. M., and 4 P. M., $1\frac{1}{2}$ glasses of milk and cream.

This gives: Milk, 1665 c.c. (56 oz.); cream, 400 c.c. (13 oz.); 6 eggs.

Protein, 105 gm. ($3\frac{1}{2}$ oz.); fat, 177 gm. (6 oz.); carbohydrate, 85 gm. (3 oz.); calories, 2400.

Before breakfast a dram (4 gm.) of subnitrate of bismuth is given in an ounce of water. One-half hour after the three principal meals $\frac{1}{2}$ -1 dram (2-4 gm.) of the following powder, equal parts of bismuth subnitrate, soda bicarbonate and calcined magnesia is given in 4 ounces (120 c.c.) of water. The magnesia may be reduced and an equal added amount of soda given if the bowels are made too active by the magnesia. One-half hour after the 11 A. M. and 4 P. M. feedings, one teaspoonful of bicarbonate of soda is given in $\frac{1}{2}$ glass of water. At night after the 7 P. M. feeding, the magnesia mixture is given at 7.45 and a teaspoonful of soda at 8.45 P. M. and 9.45 P. M., each in a half glass of water. After ten days of this diet soft foods are allowed as in the von Leube diet.

DUODENAL FEEDING

Introduction of the Duodenal Tube.—The tube is put in the patient's mouth and a swallow of water given to facilitate its descent. When it is apparently in the stomach, the patient lies on the right side and enough of the tube allowed to go down so it will gravitate into the duodenum. The time it takes the tube to reach the duodenum varies from ten minutes to

three hours, usually, however, within an hour or two. If fluid is aspirated from time to time the position of the tube can be determined, acid fluid coming from the stomach, alkaline, and particularly bile-stained fluid, from the duodenum. When once in the duodenum, the tube may be left in throughout the period of feeding, up to ten to fifteen days.

Einhorn recommends feeding 7 to 8 ounces (210-240 c.c.) milk, one egg, and a tablespoonful of lactose. Diarrhea may follow the use of lactose which can then be omitted. Butter, 1-2 drams, (4-8 gm.) may be added to each feeding. Gruels may be used if strained and free from lumps. The feedings, are given every two hours during the day or eight feedings in all, and must be given very slowly as overdistension of the duodenum causes pain. After feeding, fresh water should be run through the tube to clean it out. This should be followed by air so the tube shall be left empty.

DUODENAL FEEDING DIET. (EINHORN)

7.30 A. M.	Oatmeal gruel.....	180 c.c. (6 oz.)
	One egg	
	Butter.....	15 gm. (½ oz.)
	Lactose.....	15 gm. (½ oz.)
9.30 A. M.	Pea soup.....	180 c.c. (6 oz.)
	One egg	
	Butter.....	15 gm. (½ oz.)
	Lactose.....	15 gm. (½ oz.)

11.30 A. M. Same as at 9.30 A. M.

1.30 A. M. Bouillon.....180 c.c. (6 oz.)

One egg

3.30 P. M. Oatmeal gruel.....180 c.c. (6 oz.)

Butter..... 15 gm. ($\frac{1}{2}$ oz.)

One egg

Lactose..... 15 gm. ($\frac{1}{2}$ oz.)

5.30 P. M. Same as at 9.30 A. M.

9.30 P. M. Bouillon.....180 c.c. (6 oz.)

One egg

Total amount:

Calories

Oatmeal gruel..... 360 c.c. (12 oz.) 1476

Eggs..... 8 1352

Pea soup.....720 c.c. (24 oz.) 384

Lactose 90 gm. (3 oz.) 369

Bouillon.....360 c.c. (12 oz.) 39

Butter 90 gm. (3 oz.) 715

4335

GASTRO-ENTEROSTOMY DIET¹

This is applicable to esophageal cases, stomach cases, such as partial or complete gastectomy, excision of ulcer, pyloroplasty, gastro-enterostomy, and upper intestinal procedures such as transduodenal operation, jejunal resection and resection of upper ileum.

1st Day: Water, 1 oz. (30 c.c.) q. $\frac{1}{2}$ hr.

¹ A. V. S. Lambert.

2d Day: Water, 3 oz. (90 c.c.) q. 2 hrs. alt. with albumin water, 2 oz. (60 c.c.) q. 2 hrs.

3d Day: Water, alb.-water and broth in 3 oz. (90 c.c.) amts. Feedings q. 1 hr.

4th Day: Increase 3d day diet to 4 oz. (120 c.c.) feedings.

5th Day: Fluids, 4 oz. (120 c.c.) q. 2 hrs. Milk not included.

Martin's milk 4 oz. (120 c.c.) b. d.

Gruel, 4 oz. (120 c.c.) b. d.

Scraped beef sandwich b. d.

Fl. ext. cascara t. i. d., s. o. s.

6th Day: Allow also coddled egg b. d. and milk, 4 oz. (120 c.c.) t. i. d.

7th Day: Milk, 6 oz. (180 c.c.) t. i. d. Milk-toast b. d. Minced chicken, baked potato and purée vegetable.

8th Day: Toast and bread and butter.

9th Day: Finely cut meat.

Followed by limited regulated diet for two weeks.

GASTRIC INTOLERANCE DIET

Used in cases of persistent vomiting

Chloroform water (strictly fresh) . . . dram 1 4 c.c.

Peptonized milk (five minutes later) . oz. $\frac{1}{2}$ 15 c.c.

Repeat q. 1 h. for four doses

If not vomiting advance to

Chloroform water dram 1 4 c.c.

Peptonized milk (five minutes later) . oz. 1 30 c.c.

Repeat q. 1 h. for four doses

If not vomiting advance to

Peptonized milk alone..... 1 oz. 30 c.c.

Repeat for four doses q. 1 h.

If still not vomiting advance to

Peptonized milk..... 2 oz. 60 c.c.

Repeat q. 1 h. for four doses

Advance then at discretion of doctor or nurse to more peptonized milk, full fluids or soft diet.

DIET USEFUL IN GASTRIC HYPERACIDITY

May take:

Raw oysters.

Soups: Cream or purée (except tomato).

Fish: Fresh cod, halibut, bass, boiled, with cream sauce or broiled.

Meat: Beef well done (without gristle, fat, or gravy), chicken, turkey, guinea-hen, lamb (without fat), once daily.

Vegetables: All soft-boiled green vegetables, except cabbage, cauliflower, brussel sprouts, or turnips. Baked white potato may be used moderately. Rice or macaroni.

Cheese: Any mild variety, but better without this at first.

Desserts: Cream and egg desserts of all sorts, *e.g.*, blanc mange, Bavarian cream, floating island, cup custard, junket, soft rice or bread puddings.

Gelatin desserts made with little flavoring. Very little sugar used in all desserts. Fruit, none, except when constipation is a marked feature, then stewed soft fruits may be taken in good amount, but must be cooked with very little sugar and are best taken with or after a meal, never before. Cream may usually be freely used.

Bread: Toast, stale bread, roll. (Fresh butter or salt butter freshened by working it over in fresh water.)

Drinks: Weak tea, cocoa, water, and milk.

Cereals: Fine-grained varieties, well cooked.

Eggs: In all forms except fried.

Foods to be avoided:

All sour, spiced, or peppery foods, condiments, salt foods, chow-chow, etc. Sweets, fried foods.

Very hot or very cold foods or drinks.

Rough hard substances, such as seeds, skins of fruit or vegetables, corn, uncooked vegetables.

Coffee, wines, liquors, beer.

Hot breads, pies, cakes, syrups, etc.

CONVALESCENT GASTRIC DIETS, No. 1¹

Breakfast: Boiled milk with cocoa or coffee.

Any cereal, strained, with cream.

Soft toast, buttered.

11 A. M.: Glass of milk.

¹ T. C. Janeway.

- Dinner:** Purée of potatoes, peas, or beans with
toast soaked in it, or boiled rice, with
milk or cream.
Junket or custard, or jelly or tapioca
pudding.
- 4. P. M.:** Glass of milk with beaten egg in it.
- Supper:** 2 soft-boiled eggs.
Soft toast.
Glass of milk.
- 9.30 P. M.:** Glass of milk, with beaten egg in it.

CONVALESCENT GASTRIC DIETS, No. 2¹

- Breakfast:** Boiled milk, with a little coffee or cocoa.
Any cereal, strained, with cream
Dry toast, buttered.
1 egg.
- 11 A. M.:** Glass of malted milk.
- Lunch:** 2 soft-boiled or scrambled eggs, or fresh
boiled fish in place of eggs.
A little broiled bacon (eating the fat
and not the lean.)
Toast and milk.
- Dinner:** Purée of potatoes, rice, barley, peas,
asparagus, celery, or beans.
Buttered toast.
Rare beefsteak broiled, or lamb chop
broiled, roast beef or lamb.

¹T. C. Janeway.

Roast or broiled chicken or minced chicken, with well-cooked rice or a well-baked potato with butter.

Junket or custard, jelly or tapioca pudding.

10.30 P. M.: Glass of milk with lime-water.

COMMENTS ON GASTRIC DIETS

The dietary treatment of acute peptic ulcer, gastric or duodenal, is exceedingly satisfactory, and, if persisted in, is usually successful in producing a cure. The tendency of the acute ulcer is to heal if given the opportunity, and this fact, no doubt, accounts for the many forms of dietary treatment that have been devised, any one of them being fairly successful, if given carefully. On the other hand, the chronic ulcer is very slow to heal and requires great care and persistence in treatment, if favorable results are to be obtained. While the Lenhartz diet might do well for the acute ulcer, it does not succeed so well in the chronic cases, as the food quantities are too great and meat is added too early, indigestion and vomiting often being produced, so that the diet has to be either modified or else abandoned. In either acute or chronic cases, the Lockwood modification of the von Leube diet, or the modified (von Leube-Sippy method) work well and are to be preferred to the Lenhartz. An absolute rule of thumb feeding is not desirable as most cases need certain individual modifications of any diet.

In ulcer, the use of various forms of rectal feeding often comes up for discussion but at best these are of little more use than to furnish fluid to the system during the period of mouth starvation, and so little is satisfactorily furnished of real food value that the giving of a 2 per cent. glucose solution continuously during the first few days seems to be all that is needed. If given as the Murphy drip, 30 drops per minute for twenty-four hours, $1\frac{1}{2}$ quarts (1500 c.c.) are supplied, preventing absolutely the distressing thirst so often seen when not used. The addition of 50 grains (2.6 gm.) strontium bromid to the drip helps to keep the patient quiet and comfortable. Fully peptonized milk may be used in the same way, or even stronger glucose solutions, but the latter are apt to cause rectal irritation.

The Gastric intolerance diet is sometimes useful when there is great gastric irritability from one or another cause, with nausea and vomiting, particularly after surgical anesthesia.

The diet recommended for use after gastro-enterostomy or other operations on the upper gastro-intestinal tract, is of great value, as formerly too little attention was paid to this matter, and the postoperative cases were fed too liberally or carelessly. Some clinicians go even more slowly than this diet indicates, and prefer to use a regular ulcer diet, such as the von Leube, but advancing rather more rapidly.

The dietetic treatment of a hyperacid gastric condition, of course, depends largely upon the underlying cause of the hyperacidity; thus, if it is due to ulcer of the stomach or duodenum, the proper diet for these conditions is indicated. There are cases, however, in which the hyperacidity is a symptom of indefinite and apparently of mild origin in which a modified diet is of use.

The principle upon which this diet is constructed is based upon the fact that food which is chemically, thermally, or mechanically irritating, or which stays a long time in the stomach, is almost sure to increase the hyperacidity. Hence, these things should be omitted from the diet and only bland foods used. The other underlying principle of the diet is that it should be of a high protein value, in order to offer a large amount of this element to combine with the free hydrochloric acid which is in excess in this condition.

The protein should preferably be of the least stimulating variety, hence meat is allowed only in small amount. The best kind of animal protein being that contained in eggs, milk, and boiled fish.

GASTRIC TEST MEALS

EWALD: On early morning fasting stomach, give

White bread (no crust)..... 40 gm. ($1\frac{1}{3}$ oz.)

Clear tea or water..... 400 c.c. (6 oz.)

No butter, no sugar or milk.

Express one hour later.

Leube:

Clear beef soup..... 400 c.c. ($13\frac{1}{3}$ oz.)

Beefsteak..... 200 gm. ($6\frac{2}{3}$ oz.)

Bread..... 50 gm. ($1\frac{2}{3}$ oz.)

Water..... 200 c.c. ($6\frac{2}{3}$ oz.)

Express six hours later.

Riegel:

1 bowl mutton broth..... 200 c.c. ($6\frac{2}{3}$ oz.)

Beefsteak..... 200 gm. ($6\frac{2}{3}$ oz.)

Mashed potatoes..... 50 gm. ($1\frac{2}{3}$ oz.)

1 roll or piece of bread,

1 glass of water..... 200 c.c. ($6\frac{2}{3}$ oz.)

Express six hours later.

SERIAL TEST MEAL

The Ewald meal may be used or one pint of gruel made of strained oatmeal or other cereal just thin

enough to be aspirated through the small tube ordinarily used. A sample of the gastric contents is aspirated and tested chemically at $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ hours after taking the meal.

COMMENTS ON TEST MEALS

The Ewald test meal is almost too well known to need any word of explanation, but an outline of its use and a word about routine in gastric diagnosis may not be amiss.

Patients presenting themselves for diagnosis should be told to take their usual supper or dinner the night before the examination, eating with the meal a helping of spinach and a few stewed prunes or dried raisins. These are all easily recognized in the early morning fasting stomach should there be any actual retention. Nothing must be taken into the stomach after this meal until the time of examination, not even water after 10 P. M. The following morning the stomach-tube is introduced, and, by expression and the use of a Politzer bag or stiff rubber bulb, an attempt made (without the addition of water) to obtain any possible gastric contents. Whatever is obtained is examined for mucus, free hydrochloric acid, total acidity, blood, and microscopically for leukocytes, food remnants, and bacteria. After this, or even in case there is nothing obtained from the fasting stomach, the Ewald test meal

is given and removed one hour later without the addition of water.¹

The Riegel meal is often used for the purpose of learning what sort of gastric chemistry goes on in the presence of what might be called a normal mixed meal. At times the Ewald meal will show no free acid, whereas if meat is included this may call out enough acid, if possible, to give the reaction for free acid. Still another reason for giving the Riegel meal is that the Ewald meal is rather an abnormal meal and not so apt to call out the full or

¹ The following should be about the normal limits of gastric chemistry after the Ewald meal:

Mucus.—None, or very small amount.

Expressed.—Not over 100 to 125 c.c.

Relation of Solids to Liquids.—1 to 2 or 1 to 3.

Free Hydrochloric Acid.—15 to 30 (reckoned in cubic centimeters of $\frac{1}{10}$ normal potassium hydrate).

Combined Acids.—20 to 30.

Total Acidity.—45 to 60 (reckoned in cubic centimeters of potassium hydrate solution).

Organic Acids.—Absent.

Reaction to Dilute Lugol's Solution.—Mahogany color (blue or purple, indicating poor starch digestion; reddish or yellow, good starch digestion).

Biuret Reaction.—Normal, a purple pink.

Blood Test.—No reaction or very faint.

Microscopic Examination.—Starch grains and scattered cell detritus (no noticeable number of leukocytes, bacteria, or sarcinae should be present).

No food from previous day should be present.

For the interpretation of the divergences from the normal finding one is referred to the regular text-books on Gastric Diseases. Any food from the previous supper must be taken as an indication of mechanical obstruction at the pylorus, or possibly an extreme degree of motor insufficiency.

normally balanced secretion that the more normal meal might.

The difference between the result of the examination of this meal and the Ewald are: There may be higher acid values, the starch should be better digested, and blood reaction be present from the meat. Of course, too, the microscopic examination shows the meat residue.

This meal or the Leube may be given to test the motor efficiency of the stomach, as there should be nothing left after six and one-half to seven hours' digestion and the stomach should be empty.

The serial test meal is being largely used in many clinics. The expression is made by a small stomach tube or the duodenal tube, the latter may be left in situ during the whole period, aspirating enough contents every half hour to test chemically.

DIETS FOR INTESTINAL CONDITIONS

ANTIKONSTIPATION DIET¹ No. 1

(Hospital)

6 A. M.: Fruit, stewed or fresh.

1½ glasses of hot water.

Breakfast: Oatmeal, molasses, coffee, bran biscuits.

1 egg, baked apple or prunes, butter.

10 A. M.: 2 glasses of water.

Dinner: Soup, meat or fish, all vegetables, salad and oil, brown bread and butter, any dessert, fruit.

4 P. M.: 2 glasses of water.

Supper.: Fruit, cereal, brown bread or bran biscuits and butter, molasses.

Bedtime: Dried figs, prunes or dates, 1 glass of water.

APPROXIMATE FOOD VALUE TO BE GIVEN

	Protein	Carbohydrate	Fat	Calories
Men....	70 gm. (2½ oz.).	300 gm. (10 oz.).	80 gm. (2¾ oz.).	2200
Women.	60 gm. (2 oz.).	250 gm. (8½ oz.).	70 gm. (2½ oz.).	1800

¹ Modified from Vanderbilt Clinic diet lists.

ANTICONSTIPATION DIET NO. 2

On rising drink a glass of water, one-third to one-half grape juice or two glasses of plain water.

Breakfast.—Stewed fruit or fresh fruit. Oatmeal or Pettijohn breakfast food (25 per cent. bran), with cream and sugar, white or brown; or cornmeal mush with molasses, golden drip or maple sugar; eggs or bacon, whole wheat bread or bran bread or crackers with fresh butter, if it is obtainable (one eats more butter when it is fresh than when salted), or cooked bran may be mixed with the morning dish of cereal.

Midmorning.—Drink a glass of water or eat some dried fruit, figs, dates or Bordeaux prunes, or fresh fruit in season.

Luncheon or Supper.—Small piece of meat or fish, two green vegetables, whole wheat bread and fresh butter, bran bread or crackers, fruit, fresh or stewed. Prune or fig pudding, or salad with oil dressing.

Dinner.—Grapefruit, vegetable soup, entrée of fish or egg with caper sauce or plain. Small piece of fowl or red meat with fat. Two or more green vegetables, taken in double quantity and cooked with butter or oil, unless it is necessary to keep the weight down. Salad of celery and fruit or lettuce and other vegetables with ship biscuit or bran cracker, cold-slaw, olives, radishes, dessert—a fruit pudding, fresh fruit, stewed fruit, figs, nuts, raisins.

Bedtime.—Two figs, prunes or several dates.

Of course one is not supposed to eat all the articles mentioned at one meal, but a choice made for each, varying it as to fats and vegetables, as necessity requires.

COMMENTS ON ANTICONSTIPATION DIETS

This can be greatly modified in detail according to the patient's financial circumstances. One great underlying trouble with most people who have atonic constipation (which constitutes by far the most common type) is that the colon and rectum need stimulation by a larger food residue than the individual normally consumes, so that in general it may be said that these cases need fruits, cooked or raw, and green vegetables in double or treble the amount the normal individual does. It is only by constant effort and encouragement that patients can be brought to do this, as they feel they are eating too much food. This prejudice can be removed when they are told of the really slight food value of these articles of diet, and that they are mainly valuable on account of their bulk.

DIET IN INTESTINAL AUTO-INTOXICATION AND INDICANURIA, No. 1

7.30 A. M.: Cereal prepared with water or milk.
Rolls and fresh butter.

10.00 A. M.: Some form of gruel made with milk or water.

12.30 P. M.: One or two yolks of eggs, raw or boiled, macaroni, rice, farina with salt and fresh butter. Farinaceous pudding. Rolls and butter. (Later fruit and soft green vegetables.)

3.30 P. M.: The same as at 10 A. M.

7.00 P. M.: Same variety as at 12.30 P. M.

10.00 P. M.: Infusion of chamomile, peppermint, fennel, or anise.

After eight to ten days of this, add potatoes, purée or baked. No fluids with meals.

Later tea, coffee, cocoa, vegetables, and fruits, may be added in the order named with a little meat, first at one and then at two meals, watching the effect on the urine.

DIET IN INTESTINAL AUTO-INTOXICATION AND INDICANURIA, No. 2

Early morning, one-third to one-half glass of grape juice with equal amount of water.

Breakfast: Glass of milk or buttermilk with cereal and cream (tea or coffee later). Bread and fresh butter. Fruit.

Midmorning: One-half glass of buttermilk and slice of bread.

Dinner or Supper: Cream vegetable soup (made without stock) or thickened with flour. Yolk of two or three eggs poached or scrambled;

macaroni, cream cheese, potato, rice, baked farina, green vegetables (that grow above ground). Glass of milk or buttermilk. Bread and fresh butter. Farinaceous pudding with fruit sauce or stewed figs, prunes, apricots, pears, cherries or peaches.

Midafternoon: Cream cheese and crackers.

At Bedtime: One-half to one glass of buttermilk with two or three toasted crackers and several dates or figs.

COMMENT ON DIET IN INTESTINAL AUTO-INTOXICATION

In conditions of so-called intestinal auto-intoxication it is usually necessary to reduce the protein to the lowest possible amount as so many cases of this trouble are accompanied by the putrefaction of protein with the excessive production of indol and skatol. Of the diets useful in intestinal auto-intoxication and indicanuria No. 1 is the most drastic and is usually only necessary for a few days after which No. 2 can be used, finally working toward the use of one of the anti-constipation diets if the condition is accompanied by constipation. In any event, colon irrigations should be given regularly every day, every other day or twice a week as the severity of the case and the persistence of the symptoms demand.

DIARRHEA

ACUTE DIARRHEA

It seems almost unnecessary to discuss this condition from a dietetic point of view, as the principles governing the feeding of such cases in adults seem generally so well understood. After an initial purge and a period of digestive rest one can give the ordinary fluid diet without milk, consisting of broths, egg-albumin in water flavored with orange- or lemon-juice, and thin gruels, followed later by thin cereals, scraped meat, and toast. Fresh milk in any form usually does not agree, and is apt to increase or at least keep up the diarrhea. One should not be afraid of a generous amount of starvation, as physiologic rest to the bowel is often all that is needed.

CHRONIC DIARRHEA

Differing from acute diarrhea (where the cause is practically always from a gross dietetic error) the causes of chronic diarrhea (which is only a symptom) are numerous. In order to treat such a condition successfully one must make an accurate diagnosis, otherwise it is time and energy thrown away. One case in point: The chronic diarrhea, usually associated with a persistent gastric achylia, is, for the most part, promptly stopped by merely giving dilute hydrochloric acid regardless of a diet; and often no amount of dieting of any description will control this diarrhea without supplying the lack of normal acid. Hence one sees the necessity for an

accurate diagnosis preliminary to any form of treatment.

There are, however, numerous cases of chronic diarrhea when, regardless of the underlying cause, there is the need of a diet which fulfils the following conditions:

- (1) Non-stimulating and non-irritating.
- (2) Easily digested, leaving little residue.
- (3) Not apt to ferment.
- (4) As astringent as possible.

In order to fulfil these conditions the articles of food may be divided into those directly useful, those to be avoided, and those possibly allowable in certain cases.

DIET IN CHRONIC DIARRHEA

May take:

Raw oysters (soft part).

Clear soups.

Fish: Any soft, white-meated, non-oily variety.

Meat: Beef, lamb, without gristle, chicken, guinea-hen.

Cereals: Farina, cream of wheat, grape-nuts, shredded wheat, wheatena, flaked rice, puffed wheat or rice, well-boiled rice.

Gruels: Vermicelli.

Bread: Stale bread, toast, zwieback, toasted crackers.

Cheese: Ripe, American, Canadian, cream or cottage, pineapple.

Desserts: Gelatin desserts made with little sugar, farina pudding or almost any cereal pudding, simple cake at times (*e.g.*, sponge), blanc mange.

Drinks: Water, tea, black coffee, cocoa, claret, dry sherry, Burgundy, whisky or brandy, and water.

To be avoided:

Milk (?): Some cases can take it boiled or skimmed.

Tough or oily fish, clams, etc.

Pork, veal, ham, duck, goose.

Pickles, condiments, salads, olives, etc.

Green vegetables, salads, fruits, fresh or stewed.

Hot breads, pies, sweets of all kinds.

Sweet wines.

Articles allowable in certain cases:

Malted milk may often be used on cereals, and is better borne than fresh milk. Fresh milk boiled.

Turkey, bacon (crisp), koumiss, zoolak, baked white potato. Eggs—boiled, baked, poached, omelette, scrambled.

Baked hubbard squash, well-stewed celery, creamed spinach, small boiled onions. Boiled peas or lima beans put through a colander, without skins.

CONSTIPATING DIET

Applicable to resection of lower ileum, colon, sigmoid and rectum. First four days applicable to hemorrhoids and fistula in ano cases. In other cases continue fluids without milk until fifth day.

1st Day: Water

2d Day: Fluids without milk.

3d Day: Breakfast: Farina with cream, soft egg, small slice toast, coffee.

Dinner: Clear soup, small piece of fish or lean meat or 4 raw oysters, one slice of bread and butter, gelatin, desserts.

Supper: Soft egg on toast, tea.

4th Day: Add honey or molasses. (In other than hemorrhoids and fistula do not add until two days before bowel action is desired.)

SCHMIDT'S INTESTINAL TEST DIET¹

In the morning, 0.5 liter (16 oz.) milk, or, if milk does not agree, 0.5 liter (16 oz.) cocoa, prepared from 20 gm. ($\frac{2}{3}$ oz.) cocoa powder, 10 gm. ($\frac{1}{3}$ oz.) sugar, 400 c.c. (13 oz.) water, and 100 c.c. ($3\frac{2}{3}$ oz.) milk.

In the forenoon, 0.5 liter (16 oz.) oatmeal gruel, made from 40 gm. ($1\frac{1}{3}$ oz.) oatmeal, 10 gm. ($\frac{1}{3}$ oz.) butter, 200 c.c. ($6\frac{1}{2}$ oz.) milk, 300 c.c. (10 oz.) water, 1 egg, strained.

At noon, 125 gm. (4 oz.) chopped beef (raw weight), broiled rare with 20 gm. ($\frac{2}{3}$ oz.) of butter, so that the interior will still remain raw.

To this add 250 gm. (8 oz.) potato broth, made of 190 gm. ($6\frac{1}{3}$ oz.) mashed potatoes, 100 c.c. ($3\frac{1}{3}$ oz.) milk, and 10 gm. ($\frac{1}{3}$ oz.) butter.

¹ Schmidt, The Test Diet in Intestinal Diseases.

In the afternoon as in the morning.

In the evening as in the forenoon.

This diet consists of:

Milk.....	1.5 liters	(1½ qt.)
Zwieback.....	100 gm.	(3½ oz.)
Eggs.....	2	
Butter.....	50 gm.	(1⅔ oz.)
Beef.....	125 gm.	(4 oz.)
Potatoes.....	190 gm.	(6½ oz.)
Oatmeal (gruel).....	80 gm.	(2⅔ oz.)

This contains protein 102 gm. (3½ oz.); fat, 111 gm. (4 oz.); carbohydrates, 191 gm. (6½ oz.); calories, 2234.

A good many patients, especially women, cannot take so large an amount of food as called for in the Schmidt diet, and the following modification has been planned to meet such cases.

MODIFIED SCHMIDT DIET

	P	F	C	Cal.
Oatmeal..... 165 gm. (5½ oz.)	4.4	0.8	18.2	100
Rice..... 90 gm. (3 oz.)	2.4	0.8	21.0	100
Milk..... 1500 c.c. (50 oz.)	49.5	60.0	67.5	1080
Butter..... 40 gm. (1½ oz.)	0.6	34.0	....	318
Bread..... 120 gm. (4 oz.)	13.1	2.4	80.0	400
Chopped meat... 65 gm. (2 oz.)	17.1	4.7	....	100

Protein, 87.1 gm. (3 oz.); Fat, 102.7 gm. (3½ oz.); Carbohydrates, 187.7 gm. (6 oz.); Calories, 2088.

<i>Breakfast</i>	<i>Dinner</i>	<i>Supper</i>
Oatmeal, 165 gm. (5½ oz.)	Meat, 65 gm. (2 oz.)	Rice, 90 gm. (3 oz.)
Milk, 250 c.c. (3 oz.)	Bread, 40 gm. (1½ oz.)	Bread, 40 gm. (1½ oz.)
Bread 40 gm. (1½ oz.)	Milk, 250 gm. (8 oz.)	Butter, 15 gm. (½ oz.)
Butter, 15 gm. (½ oz.)	Butter, 10 gm. (⅓ oz.)	Milk, 250 c.c. (8 oz.)

At 10, 3 and 9 o'clock, 250 c.c. milk.

COMMENTS ON SCHMIDT'S INTESTINAL TEST DIET

Schmidt's intestinal test diet is a convenient and uniform diet for testing the intestinal functions, and gives as a starting-point a feces of uniform composition. In Schmidt's words, "such a test diet must be one which can be taken equally well by healthy people as well as those suffering from an intestinal disorder; it must be free, but not absolutely free, from waste matter, in order that the stimulus ordinarily furnished by the ingesta should not be completely absent; it must be capable of supplying, at least, the minimum of calories required by the body (at rest), and must contain the three chief groups of food stuffs in proportionate relation to each other; finally, it must be of simple composition, easy to make, and uniformly prepared." While this is not the only diet conceivable for such a purpose, there is a great advantage in the universal use of a particular diet for testing intestinal functions, just as we use standard diets for testing the gastric functions, and it is of a definite composition and the result of its use in many cases can be correlated.

DIABETIC DIETS

NO. 1. DIET FOR A FAST DAY

Breakfast: Cup of coffee, 200 c.c. ($6\frac{1}{2}$ oz.) (saccharin). No milk or sugar.

Thrice cooked¹ 5 per cent. vegetables, 200 gm. ($6\frac{1}{2}$ oz., *e.g.*, string beans, spinach, cauliflower, etc., vinegar, q. s.

Mid A.M.: Salt-poor broth, 200 c.c. ($6\frac{1}{2}$ oz.).

Luncheon: Salt-poor broth, 200 c.c. ($6\frac{1}{2}$ oz.). Cup of tea or coffee, 200 c.c. ($6\frac{1}{2}$ oz.) (or more). Thrice cooked 5 per cent. vegetables, 200 gm. ($6\frac{1}{2}$ oz.). Vinegar q. s. Whisky, 30 c.c. (1 oz.) if desired.

Supper: Same as luncheon, using variety of vegetables.

Bedtime: Salt-poor broth.

Water ad libitum.

In certain cases a total of 800 gm. (26 oz.) of thrice cooked 5 per cent. vegetables is allowed.

¹ Thrice cooked means boiled in three separate waters to remove practically all carbohydrates.

NO. 2. STANDARD STRICT DIET. (GEYELIN)

Diet contains 15 gm. carbohydrate, 30 gm. fat, 30 gm. protein.¹

Breakfast: 2 eggs.

1 cup of coffee (200 c.c.) 6½ oz. and saccharin. No cream.

Luncheon: Tomatoes (fresh) (200 gm.) 6½ oz.
(7.8 gm. (117 grains) carbohydrate.)

Broth (200 c.c.) 6½ oz.

2 P. M.: 1 white of egg.

Broth (200 c.c.) 6½ oz.

Supper: String beans (canned) (200 c.c.) 6½ oz.
(7.2 gm. (108 grains) carbohydrate.)

Butter, (7 gm.) ¼ oz.

2 eggs.

1 cup of tea—no cream.

Chicken may be substituted here for eggs—71 gm. (105 grains) would be necessary, then 3 gm. (45 grains) must be added to butter.

When necessary 200 (6½ oz.) to 300 c.c. (10 oz.) of broth may be given at 8 or 9 P. M.

Next day 25 gm. carbohydrate: To increase this diet 10 gm. (150 grains) carbohydrate without changing fat or protein appreciably add 250 gm. (8 oz.) of cooked beans, given at lunch. Calories, 41.

35 gm.: To increase 10 gm. (150 grains) more carbo-

¹ Spoken of as a fifteen, thirty, thirty diet.

hydrate add 180 gm. (6 oz.) of (once boiled) cabbage and take away the white of one egg. Add cabbage to 2 P. M. feeding. 41 calories.

45 gm.: To increase 10 gm. more add 250 gm. (8 oz.) of raw or canned tomato, add this to breakfast. 41 calories.

55 gm.: To increase 10 gm. (150 grains) more add 180 gm. (6 oz.) more cabbage. 41 calories.

185 gm. (6 oz.) cabbage. 250 gm. (8 oz.) beans.

All salt free.

Protein 30 gm. (1 oz.) 121.8 calories.

Fat 30 gm. (1 oz.) 276.2 calories.

Carbohydrate. . 15 gm. ($\frac{1}{2}$ oz.) 63.1 calories.

461.1 calories for 15:

30: 30. diet.

NO. 3. ALTERNATE STANDARD STRICT DIET

(15: 30: 30.)

Breakfast: Egg, 1.

Coffee, 1 cup, 200 c.c. ($6\frac{1}{2}$ oz.) with saccharin. No milk.

Dinner: Steak, lean round, 75 gm. ($2\frac{1}{2}$ oz.).

Beans, string, 132 gm. ($4\frac{1}{2}$ oz.).

Tomato, canned, 127 gm. (4 oz.).

Butter, 10 gm. ($\frac{1}{3}$ oz.).

Cup of tea, 200 c.c. ($6\frac{1}{2}$ oz.).

Supper: Asparagus, 178 gm. (6 oz.).

Egg, 90 gm. (3 oz.).

Butter, 10 gm. ($\frac{1}{3}$ oz.).

Tea, 200 c.c. ($6\frac{1}{2}$ oz.).

<i>Diet:</i>		30 P.	30 F.	15 C.
Steak,	75 gm. ($2\frac{1}{2}$ oz.)	15.0	1.5	
Beans,	132 gm. ($4\frac{1}{2}$ oz.)	1.4	0.1	5.0
Tomato,	127 gm. (4 oz.)	1.5	0.2	5.1
Asparagus,	178 gm. (6 oz.)	2.5	0.1	5.0
Egg (2),	90 gm. (3 oz.)	11.4	11.4	
Butter,	20 gm. ($\frac{2}{3}$ oz.)		17.0	
		P. 31.8	F. 30.3	C. 15.1

NO. 4. ALTERNATE STANDARD STRICT DIET

(15: 30: 30.)

Breakfast: Egg, y. 1.

Egg w. 2

Butter 5 gm. ($1\frac{1}{2}$ drams.)Tea or coffee without sugar or milk. 200
c.c. ($6\frac{1}{2}$ oz.).Dinner: Chicken, 100 gm. ($3\frac{1}{3}$ oz.).Cauliflower, 110 gm. ($3\frac{1}{2}$ oz.).

Tomato, 127 gm. (4 oz.).

Lettuce, 25 gm. (1 oz.).

Butter, 10 gm. ($\frac{1}{3}$ oz.).Tea, 200 c.c. ($6\frac{1}{2}$ oz.).Supper: Beans, 132 gm. ($4\frac{1}{2}$ oz.).Butter, 5 gm. ($1\frac{1}{2}$ drams.).Tea or coffee without milk or sugar, 200
c.c. ($6\frac{1}{2}$ oz.).

<i>Diet:</i>		30 P.	30 F.	15 C.
Chicken,	100 gm. ($3\frac{1}{3}$ oz.)	17.6	7.6	
Cauliflower,	110 gm. ($3\frac{2}{3}$ oz.)	0.9	...	0.5

Tomato,	127 gm. (4 oz.)	1.5	0.2	5.1
Lettuce,	25 gm. (1 oz.)	0.3	...	0.7
Beans,	132 gm. (4½ oz.)	1.4	0.1	5.0
Egg, (1 y., w. 2)		8.8	5.7	
Butter,	20 gm. (¾ oz.)	...	17.0	

P.30.5 F.30.6 C.15.8

Tea or coffee.

SAMPLE DIABETIC DIETS OF INCREASING STRENGTH

	Gm., Amt.	Pro.	Fat.	CH.	
No. 5.					
Breakfast:					
Egg, whites (2).....	5.6	6.2			Diet Pro. 40, Fat 20, Co H 15
Egg, yolks (2).....	34	5.2	11.4		
Grapefruit.....	100			5.0	
Dinner:					
Round steak.....	80	17.0	6.3		Calories in Pro. 164.0 Calories in Fat 205.5 Calories in Co H 63.5 433.0
Beans.....	130	1.4	0.1	5.0	
Supper:					
Chicken.....	50	8.8	3.8		
Lettuce.....	25	0.3		0.7	Calories in Pro. 248.0 Calories in Fat 386.8 Calories in Co H 63.9 698.7
Tomatoes.....	125	1.1	0.5	4.8	
		40.0	22.1	15.5	
No. 6.					
Breakfast:					
Egg, whites (3).....	84	9.3			Diet Pro. 60, Fat 40, Co H 15
Egg, yolks (3).....	51	7.8	17.1		
Dinner:					
Carrots.....	50	0.5	0.2	4.6	
Cream.....	25	0.6	4.7	1.1	Calories in Pro. 248.0 Calories in Fat 386.8 Calories in Co H 63.9 698.7
Steak (round lean)..	130	27.6	10.2		
Beans.....	100	1.1	0.1	3.8	
Supper:					
Asparagus.....	178	2.5	0.1	5.0	Calories in Pro. 248.0 Calories in Fat 386.8 Calories in Co H 63.9 698.7
Cream.....	25	0.6	4.7	1.1	
Chicken.....	60	10.5	4.5		

	Gms., amt.	Pro.	Fat	CH.	
No. 7.					
Breakfast:					
Grapefruit.....	100	.....	.....	5.0	Diet
Salmon (can).....	100	21.8	12.1	.....	Pro. 70, Fat 50, Co H 25
Dinner:					
Asparagus.....	100	1.5	0.1	2.8	
Beets.....	75	1.1	0.1	6.7	
Steak (round).....	110	23.4	8.6		
Butter.....	9	.....	7.2		
Supper:					
Lettuce.....	25	0.3	.....	0.7	
Peas.....	100	3.6	0.2	10.0	Calories in pro. 289.4
Cream cheese					Calories in fat 468.7
(crown).....	25	1.3	14.5	0.5	Calories in Co H 105.3
Chicken.....	100	17.6	7.6		
					<u>863.4</u>
		70.6	50.4	25.7	
No. 8					
Breakfast:					
Grapefruit.....	200	.....	.....	10.0	Diet
Egg, whites (2)....	56	6.2			Pro. 80, Fat 60, Co H 50
Egg, yolks (2)....	34	5.2	11.4		
Bread.....	20	1.8	.....	10.0	
Dinner:					
Peas.....	100	3.6	0.2	10.0	
Steak (round).....	120	25.5	9.4		
Egg, white (1)....	28	3.1			
Egg, yolk (1)....	17	2.6	5.7		
Salmon.....	55	11.9	6.6		
Cream.....	25	0.6	4.7	1.1	Calories in pro. 332.5
Supper:					
Beans.....	100	1.1	0.1	3.8	Calories in fat 563.5
Lettuce.....	25	0.3	.....	0.7	Calories in Co H 208.2
Cream cheese.....	25	1.3	14.5	0.5	
Chicken.....	100	17.6	7.6		<u>1104.2</u>
Apple.....	90	0.3	0.4	14.7	
		81.1	60.6	50.8	

FOODS ARRANGED APPROXIMATELY ACCORDING TO PER CENT. OF CARBOHYDRATES¹*Vegetables*

5 Per cent.		10 Per cent.	15 Per cent.	20 Per cent.
Lettuce	Cauliflower	Onions	Green peas	Potatoes
Spinach	Tomatoes	Squash	Artichokes	Shell beans
Sauerkraut	Rhubarb	Turnip	Parsnips	Baked beans
String beans	Egg plant	Carrots	Canned lima beans	Green corn
Celery	Leeks	Okra		Boiled rice
Asparagus	Beet greens	Mushrooms		Boiled
Cucumbers	Water cress	Beets		macaroni
Brussels sprouts	Cabbage			
Sorrel	Radishes			
Endive	Pumpkin			
Dandelions	Kohl-rabi			
Swiss chard	Broccoli			
Sea kale	Vegetable marrow			

Fruits

Ripe olives (20 per cent. fat) Grapefruit	Lemons Oranges Cranberries Strawberries Blackberries Gooseberries Peaches Pineapple Watermelon	Apples Pears Apricots Blueberries Cherries Currants Raspberries Huckleberries	Plums Bananas
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¹ Joslin Treatment of Diabetes, page 370, 1st ed.

Nuts

Butternuts	Brazil nuts	Almonds	Peanuts
Pignolias	Black walnuts	Walnuts	
Miscellaneous: unsweet- ened and spiced pickles,	Hickory nuts	(English)	
clams, oysters, scallops,	Pecans	Beechnuts	40 per cent.
liver, fish roe.	Filberts	Pistachios	Chestnuts
		Pine nuts	

Reckon actually available carbohydrates in vegetables of 5 per cent. group as 3 per cent., of 10 per cent. group as 6 per cent.

COMMENTS ON DIABETIC DIETS

The older method of dietary cure for diabetes mellitus, as exemplified by the Vienna school, has given way almost completely to the routine first advocated by Allen. The essential features of this plan of treatment are (1) starvation of the patients until they become sugar and acid free; (2) reduction of weight below that ordinarily normal for that individual in health; (3) the determination of the individual's protein, fat and carbohydrate tolerance.

The starvation may be relative or actual but usually the former, as broths, black coffee, tea, whisky and thrice cooked vegetables are allowed and in some cases a weak food formula of carbohydrate 15 gm., fat 30 gm. protein 30 gm. is used. The fear of severe ketonuria following such a procedure has been entirely done away with, as experience has shown that the organic acids and the sugar usually disappear progressively from the urine. When, after a trial of a few days, this does not

take place it is often only necessary to give a little food for a day or two and then withdraw it, after which the sugar and ketone bodies are apt to clear up.

Allen found a distinct advantage and increased carbohydrate tolerance after the patients lose weight, and often when they start later to reaccumulate fat, sugar may again appear in the urine.

The method of using Allen's principles of diet, as modified by Geyelin, may be stated as follows, for while it is impossible to outline in detail a method of treatment which will apply to all cases of diabetes, the following general routine is the one most commonly used in the Presbyterian Hospital.

The patient is placed on an arbitrary low-caloric diet made up of 15 gm. ($\frac{1}{2}$ oz.) carbohydrate, 30 gm. (1 oz.) protein and 30 gm. (1 oz.) fat. He is kept on this diet for a few days to determine what effect this low-food intake has in overcoming glycosuria. Low as this food intake is, it is more agreeable to the patient than complete fasting. If after a period of from one to four days, the glycosuria is not decreasing or is increasing, a fast is immediately instituted.

On a fast day the patient is given the following: Water, coffee, tea and thin broth in definite amounts, together with thrice boiled 5 per cent. vegetables and at least 10 gm. of salt. Whisky is given, if indicated, in daily doses of from 2 to 5 ounces. (Diet No. 1).

As soon as the patient is free from sugar, and using the

blood sugar as a rough guide of future food tolerance, a diet of from 10 to 50 gm. ($\frac{1}{3}$ to $1\frac{2}{3}$ oz.) carbohydrate is given together with 30 gm. (1 oz.) protein and 30 gm. (1 oz.) fat. Keeping the carbohydrate at a constant level (10 to 50 gm.), the protein and fat are increased 10 gm. ($\frac{1}{3}$ oz.) each daily, until sugar appears or until the protein intake has reached a level of $1\frac{1}{2}$ gm. (22 gr.) per kilo. of body weight, and the fat has reached from 100 to 150 gm. ($3\frac{1}{3}$ to 5 oz.) If on this food intake the patient is still sugar free, the carbohydrate is increased 10 gm. ($\frac{1}{3}$ oz.) daily until glycosuria appears and a fast day is then given. Following this the previous carbohydrate level reached is cut in half while protein and fat are left the same, *i.e.*, $1\frac{1}{2}$ gm. (22 gr.) protein per kilo. body weight, and 100 to 150 gm. ($1\frac{1}{3}$ to 5 oz.) fat. This food intake is kept constant for a few days and the patient is then sent home and told to keep this diet.

Should glycosuria appear while the patient is on a fixed low carbohydrate intake as described above and while the protein and fat are being increased, a fast day is given; following the fast the protein and fat intake are lowered from 10 to 20 gm. ($\frac{1}{3}$ to $\frac{2}{3}$ oz.) and kept constant while the carbohydrate is gradually increased 5 gm. (75 gr.) daily until sugar appears again in the urine. Another fast day is then given and subsequent diet is directed as the physician in attendance sees fit.

In the severe cases the procedure adopted depends on the degree of acidosis, and on whether coma is threatening or not. If this is not the case, the patient's diet is gradually reduced in carbohydrates until, after a few days, they are fasted and put on diet No. 1, or the standard strict diet No. 2. This usually converts a severe into a medium severe case, and the diet is then planned as already outlined in the medium severe cases.

If coma is impending, the patients are given a plain saline infusion into the vein, and urged to take from 5 to 10 gm. ($\frac{1}{6}$ to $\frac{1}{3}$ oz.) salt by mouth in the expectation that subcutaneous edema will be induced and the ketone bodies stored in the tissues. In addition glucose is given by mouth, particularly if the patients have been previously starved of carbohydrates. When the danger of coma is past, they are treated as the medium severe cases.

When patients reach a fair maintenance diet, sufficient to keep their weight stationary at the new low level, they are allowed up and encouraged to exercise vigorously, as tending to increase carbohydrate tolerance.

It is found convenient to make the addition in the carbohydrate allowance by using definite amounts of 5, 10, 15, and 20 per cent. vegetables as shown by the list of vegetables.

Diets 3, 4, 5, 6, 7 and 8 simply represent examples of definite amounts of protein, fat and carbohydrates which may be used as one wishes to increase or vary the

diet, remembering that they are only examples and that in all this work food is used quantitatively with specific reference to the amount of protein, fat, carbohydrates and calories furnished the system. In order to compute the diabetic diets most readily, reference should be made to the table of foods on pages 134 and 147. Using those compiled by Atwater and Bryant—Fisher's 100 calory portions or the table arranged by Geyelin and Foster—the latter being the one particularly used at the Presbyterian Hospital, page 154.

JOSLIN'S RÉSUMÉ OF ALLEN'S TREATMENT FOR DIABET

Fasting.—Fast until sugar free. Drink water freely and one cup of tea and one cup of coffee if desired. If sugar persists after two days of fasting, add in divided portions 300 c.c. (10 oz.) clear meat broth.

Alcohol.—If acidosis (diacetic acid) is present, give 0.5 c.c. (7 m.) of alcohol per kilogram (2.2 lbs.) body weight daily until acidosis disappears. Alcohol is best given in small doses every three hours.

Carbohydrate Tolerance.—When the twenty-four hour urine is sugar free, add 150 gm. (5 oz.) of 5 per cent. vegetables, and continue to add 5 gm. ($\frac{1}{6}$ oz.) carbohydrate daily up to 20 gm. ($\frac{2}{3}$ oz.) and then 5 gm. ($\frac{1}{6}$ oz.) every other day, passing successively upward through the 5, 10 and 15 per cent. vegetables, 5 and 10 per cent. fruits, potato and oatmeal, to bread, unless sugar appears

or the tolerance reaches 3 gm. (45 gr.) carbohydrate per kilogram (2.2 lbs.) body weight.

Protein Tolerance.—When the urine has been sugar free for two days add 20 gm. ($\frac{2}{3}$ oz.) protein (three eggs) and thereafter 15 gm. ($\frac{1}{2}$ oz.) protein daily in the form of meat, until the patient is receiving 1 gm. (15 gr.) protein per kilogram body weight, or if the carbohydrate tolerance is zero, only $\frac{3}{4}$ gm. (12 gr.) per kilogram body weight. Later, if desired, the protein may be raised to 1.5 gm. (22 gr.) per kilogram body weight.

Fat Tolerance.—While testing the protein tolerance, a small quantity of fat is included in the eggs and meat given. Add no more fat until the protein reaches 1 gm. (15 gr.) per kilogram (2.2 lbs.) body weight (unless the protein tolerance is below this figure), but then add 25 gm. ($\frac{5}{6}$ oz.) fat daily until the patient ceases to lose weight or receives not over 40 calories per kilogram body weight.

Reappearance of Sugar.—The return of sugar demands fasting for twenty-four hours or until sugar free. The diet preceding the reappearance of sugar is then resumed except that the carbohydrate should not exceed half the former tolerance until the urine has been sugar free for two weeks, and it should not then be increased more than 5 gm. (75 gr.) per week.

Weekly Fast Days.—Whenever the tolerance is less than 20 gm. ($\frac{2}{3}$ oz.) carbohydrate, fasting should be

practised one day in seven; when the tolerance is between 20 and 50 gm. ($\frac{2}{3}$ to $1\frac{2}{3}$ oz.) carbohydrate, 5 per cent. vegetables and one-half the usual quantity of protein and fat are allowed upon the fast day; when the tolerance is between 50 and 100 gm. ($1\frac{2}{3}$ to $3\frac{1}{3}$ oz.) carbohydrate, the 10 per cent. and 15 per cent. vegetables are added as well. If the tolerance is more than 100 gm. ($3\frac{1}{3}$ oz.) carbohydrate, upon the weekly fast day the carbohydrate should be halved.

Bread is seldom prescribed, because it is so easy for a patient to overstep the limits. Many patients use bread substitutes, such as Huntley and Palmer's Akoll Biscuits, Barker's Gluten Flour (Brand A), Hepco Flour (Lyster Bros.), Diabetic Flour (Whitefield, New Hampshire). The quantity of fat which it is necessary to give a severe case is considerable. A diabetic weighing 60 kilograms (132 lbs.) requires at least 30 calories per kilogram body weight to be up and about the hospital, with an occasional walk. Since in the severe cases not more than 10 gm. ($\frac{1}{3}$ oz.) carbohydrate, representing 40 calories, can be given in this form, and seldom more than 75 gm. ($2\frac{1}{2}$ oz.) protein (1.25 gm. (20 gr.) per kilogram body weight) which would amount to 300 calories more, the balance of the diet must be made up of 150 gm. (5 oz.) fat, amounting to 1350 calories, and even more unless 15 gm. ($\frac{1}{2}$ oz.) alcohol are given, which would amount to 105 calories.

QUANTITY OF FOOD REQUIRED BY A SEVERE DIABETIC PATIENT
WEIGHING 60 KILOGRAMS (132 lbs.)

Food	Quantity, grams	Calories per gram	Total, Calories
Carbohydrate.....	10 ($\frac{1}{3}$ oz.)	4	40
Protein.....	75 (2 $\frac{1}{2}$ oz.)	4	300
Fat.....	150 (5 oz.)	9	1350
Alcohol.....	15 ($\frac{1}{2}$ oz.)	7	105
			1795

Should the patient remain sugar-free and the weight be maintained upon this diet, gradually the quantity of fat could be lowered and the carbohydrate increased. A very few of the patients have a tolerance for between 200 and 300 gm. ($6\frac{2}{3}$ to 10 oz.) of carbohydrate. With most the tolerance is below 100 gm. ($3\frac{1}{3}$ oz.) and with the majority it is under 50 gm. ($1\frac{2}{3}$ oz.).

The patient should have one day of restricted diet each week, no matter how mild the case. This is done partly to spare the function which controls the carbohydrate metabolism, but also to remind the patient of what a strict diet really is. The patient is told to gain little or no weight, and as Allen advises, not to come up to his former weight. The severer cases examine the urine daily, and the milder ones once a week. The patients are instructed to lead less strenuous lives. Unfortunately, they feel so well that often this advice is disregarded, and he believes that all of us err in

allowing our patients to do too much. They should have nine hours in bed at night, and should have a quiet hour of rest each day, no matter how well they feel.

PURIN-FREE DIETS

LIQUID PURIN-FREE DIET

(FOLIN)

Whole milk.....	500 c.c. (16 oz.).
Cream (18 to 22 per cent. fat).	300 c.c. (10 oz.).
10 eggs (whites and yolks)....	450 gm. (15 oz.).
Horlick's malted milk.....	200 gm. (6 $\frac{2}{3}$ oz.).
Sugar.....	20 gm. ($\frac{2}{3}$ oz.).
Sodium chloride.....	6 gm. ($\frac{1}{5}$ oz.).
Water.....q. s. ad.	2000 c.c. (64 oz.).
Extra water.....	900 c.c. (30 oz.).

Yields

Protein.....	139 gm. (4 $\frac{2}{3}$ oz.)	} 2830 calories.
Fat.....	146 gm. (4 $\frac{5}{6}$ oz.)	
Carbohydrate.....	225 gm. (7 $\frac{1}{2}$ oz.)	

SOFT PURIN-FREE DIET¹

6 A.M.: Milk, 180 c.c. (6 oz.).

8 A.M.—Breakfast:

Milk, 180 c.c. (6 oz.).

1 $\frac{1}{2}$ slices of bread and 1 pat of butter.

2 tablespoonfuls wheatina or cream of wheat with cream, 60 c.c. (2 oz.), and 2 tablespoonfuls of sugar.

1 soft-boiled egg.

¹ Vanderbilt Clinic diet lists.

12 M.—Dinner:

Milk, 180 c.c. (6 oz.).

1 soft-boiled egg, S. O. S.

Potato with cream, 30 c.c. (1 oz.), and 1 pat of butter.

Lettuce or cabbage with dressing.

1½ slices of bread with 1 pat of butter.

3 P.M.: Milk, 180 c.c. (6 oz.).

5 P.M.—Supper:

1 soft-boiled egg, S. O. S.

Milk, 180 c.c. (6 oz.).

2½ tablespoonfuls of rice with cream, 30 c.c. (1 oz.),
and 1 tablespoonful of sugar.

Crackers with butter, 1 pat.

1 cube of cheese (2 inches).

1 cup of weak tea with cream, 30 c.c. (1 oz.), and
1 teaspoonful of sugar, S. O. S.

8 P.M.: Milk, 180 c.c. (6 oz.).

Protein, 80 gm. (2¾ oz.); fat, 112 gm. (3½ oz.); carbohydrate, 207 gm. (7 oz.); calories, 2300.

DIET IN GOUT¹**Breakfast:**

Any fresh, cooked, or preserved fruit.

Cereal with sugar and milk or cream.

White bread, toast, muffins, biscuits, butter.

2 eggs (any style).

Milk, with slight amount of coffee, tea, or cocoa.

¹ Modified from Von Noorden.

Lunch and Dinner:

Soups.—Cream, potato, or from any vegetable given below, prepared without meat or meat extract.

Eggs, any style.

Meat and Fish.—Once a day one of the following:

Ham, boiled beef, boiled chicken, boiled mutton, pot roast, any boiled fish.

Vegetables.—Potatoes, sweet potatoes, cauliflower, lettuce, cabbage, spinach, okra, egg-plant, corn, Brussels sprouts, rice, macaroni, noodles.

Bread.—Crackers, white bread, toast, butter.

Desserts.—Fresh, cooked, or preserved fruit, all desserts (ice-cream, pudding, cake, pie, etc.) not flavored with coffee or chocolate American, Swiss, and cream cheese.

Beverages.—Milk, cider, water, Vichy or any carbonated water. Grapejuice and raspberry syrup allowed.

Approximate Values to be Given

	Protein	Carbohydrate	Fat	Total calories
Men...	60 gm. (2 oz.)	350 gm. (11 $\frac{3}{8}$ oz.)	60 gm. (2 oz.)	2200
Women...	50 gm. (1 $\frac{3}{8}$ oz.)	300 gm. (10 oz.)	50 gm. (1 $\frac{3}{8}$ oz.)	1800

PURIN-FREE ARTICLES OF DIET¹

Milk.

Eggs.

Bread, white only (not graham or whole wheat).

Butter.

¹ Vanderbilt Clinic diet lists.

Biscuits.

Cereals (hominy, rice, farina).

Cream.

Sugar and syrup.

Jam and marmalade.

Cake.

Cream soups.

Vegetables:

Potatoes (slight amount of purin).

Cauliflower.

Cabbage.

Lettuce.

Egg-plant.

Desserts:

Nuts.

Cheese.

Ice-cream and water-ices.

Cake (any cake except with coffee or chocolate flavor).

Rice, bread, farina, tapioca, or cornstarch pudding.

Custard or cocoanut pie.

THE PURIN BODIES IN VARIOUS FOOD-STUFFS¹

Fish:	Purin bodies, grams per kilo
Cod.....	0.5
Plaice.....	0.7
Salmon.....	1.1
Halibut.....	1.0

¹ Hall J. Walker, *The Purin Bodies of Food Stuffs and the Rôle of Uric Acid in Health and Disease*, 2d ed. rev., London, 1903.

Meat:	Purin bodies, grams per kilo
Beef.....	1.3-2.0
Fat.....	1.1
Mutton.....	0.96
Fat.....	—
Veal.....	1.1
Fat	—
Pork	1.2
Fat.....	0.5
Ham.....	1.1
Chicken.....	1.2

Meat soups (varying large amounts).

Vegetables:

Potatoes.....	0.02
Rice.....	—
Flour (white).....	—
Bread (white).....	—
Oatmeal.....	0.53
Peas.....	0.39
Lentils.....	0.38
Beans (Haricot).....	0.63
Asparagus.....	0.21
Cabbage.....	—
Lettuce.....	—
Cauliflower.....	—
Onions	0.09
Tapioca.....	—

Special Foods:	Purin bodies, grams per kilo
Milk.....	—
Butter.....	—
Eggs.....	—
Cheese (fat).....	—

Drinks:

Beer, lager.....	0.12
Ale.....	0.14
Porter.....	0.15

	Per pint (500 c.c.)
Tea.....	1.2
Cocoa.....	1.0
Chocolate.....	0.7
Coffee.....	1.7
Claret.....	—
Sherry.....	—
Port.....	—

COMMENTS ON PURIN-FREE DIETS

Since in gout the purin metabolism is faulty, the aim of its dietetic treatment should be to furnish a food containing little or no purin bodies.

In the liquid purin-free diet, as designed by Folin, we have a diet that is useful almost exclusively for scientific purposes, when one wishes to determine the amount of endogenous uric acid that is excreted. It can, how-

ever, be used to advantage during an acute attack of gout, although it contains about twice too much protein, and in the acute stage a milk diet is better.

The soft purin-free diet can, for the most part, be used in acute gout, and is much more palatable. The amount of protein or the total calories can be reduced or increased at will to meet the requirements of large or small individuals. The list given is sufficient for a man of 70 kilos (154 pounds). Women seldom have acute gout.

The list of purin-free articles of diet is inserted to help one prescribe a variety in case the diet is continued for some time.

The diet given specifically for chronic gout can be modified from the purin-free list as well, and, while this diet for gout is not absolutely purin free, it is of a low purin content, and boiling the meats, particularly if they are boiled in two waters, removes a great part of the purins.

OBESITY DIETS

(RICHTER)

Early A. M.: Cupful of tea, no milk or sugar.

Ham, 40 gm. ($1\frac{1}{3}$ oz.).

1 roll (dry).

10 A. M.: Fresh fruit.

12 A. M.: Fresh fruit.

2 P. M.: Clear soup, 100 gm. ($3\frac{1}{3}$ oz.); lean meat,
plenty of green vegetables without
butter or milk.

Salad.

1 or 2 glasses of lemonade without sugar.

Use saccharin if wanted.

4 P. M.: Cup of tea.

6 P. M.: Fruit.

8 P. M.: 75 gm. ($2\frac{1}{2}$ oz.) of lean meat, radishes,
potato (small one), sour pickles.

Take one or two steam baths per week.

Protein, 75 gm. ($2\frac{1}{2}$ oz.); fat, 50 gm. ($1\frac{2}{3}$ oz.); carbo-
hydrate, 130 gm. ($4\frac{1}{2}$ oz.); calories, 1300.

(TIBBLES)

- Breakfast: Milk, 500 c.c. (1 pint).
Luncheon: Meat, 180 gm. (6 oz.). A plate of boiled vegetables (bread and potatoes are not allowed). Junket, 250 gm. ($\frac{1}{2}$ pint).
5 P. M.: Junket, 250 gm. ($\frac{1}{2}$ pint), two cups of tea, with very little sugar.
Dinner: Milk, 500 c.c. (1 pint), 2 apples.

Approximate Values

Protein 100 gm. ($3\frac{1}{3}$ oz.); fat, 60 gm. (2 oz.); carbohydrate, 50 gm. ($1\frac{2}{3}$ oz.); calories, 1800.

COMMENT ON OBESITY DIETS

The accumulation of fat in the subcutaneous tissues is due either to an excess of food combined with too little work, or it is a true disease, in which case fat is deposited in spite of a small ration. In the first instance, diet alone combined with exercise is necessary for reduction; in the second variety other methods must be used as well.

Reduced to its simplest terms the dietary treatment of obesity in the simple variety may be summed up as "less food—more work." Actually, it is not as simple as this for the protein allowance must be kept up to normal and the reduction made in carbohydrate and fats, the latter being the intensive fat-building bodies. Combined with this there must go a definite method of muscular exercise.

Von Noorden's regimen for reduction in obesity is perhaps the most rational one and depends for its success upon reduction of the caloric intake of the individual as calculated for the amount one should weigh for a certain height (see page 133) and then reducing the intake to a point below this, the exact amount to be determined by the degree of obesity. Thus, there is a reduction for a slight, moderate or marked obesity.

For a normal person weighing 70 kilos (154 pounds) 38 calories per kilo are required as a "maintenance" diet, *i.e.*, 2590 calories. If an individual weighs 100 Kg. (220 pounds) *i.e.*, 30 Kg. (66 lbs.) more than he should for his height, it requires 1110 extra calories to maintain these 30 Kg. overweight. Since we know that 2590 calories constitutes a maintenance diet for the normal weight for that particular height, we must plan a diet which is one-fifth, two-fifths, or three-fifths less than the maintenance diet according as the reduction is to be undertaken for a mild, medium or severe degree of obesity, *i.e.*, the first degree of reduction would call for a diet of 2000 calories, the second degree of reduction 1500 calories and the third degree of reduction 1000 calories. For the first degree of reduction it is often only necessary to omit all visible fat, such as oils, butter, fat meat, have vegetables cooked without fat, sweets should be eliminated and alcohol prohibited. For the second and third degree of reduction it may be necessary to accurately calculate and weigh the foods until

the eye becomes trained to the correct amounts. The severe degree of reduction should never be undertaken except under strict supervision in hospital or sanitarium. With the reduction in food calories, graduated exercises should be arranged to maintain muscular strength and even to increase it, as otherwise the patient will be left after reduction with a depleted neuro-muscular system and his last state be worse than his first. In all these diets the protein should be kept at a moderately high level to prevent undue loss of body protein as the fats and carbohydrates, the normal protein spacers, are markedly limited. Approximately 80 to 100 gm. protein should be allowed and in some cases more.

The examples of diet in obesity are only given to show in a general way what foods are principally useful in this process of reduction and they are also examples of different degrees of restriction in caloric value. It is much better to plan a definite diet for each case as can be readily done by means of Fisher's 100 caloric portions (see page 147).

It is a good plan to make the lightest meal at night as the body can more than use up during sleep, a supper of low caloric value.

FIVE THOUSAND CALORIE DIET

Food	Gm. amt.	Oz.	Pro.	Fat	CH.	Meals	
Grapes.....	150	5	1.5	1.8	21.6	Breakfast:	
Grapenuts...	65	2	7.7	0.4	51.5	Grapes	
Bacon.....	36	1	3.2	20.8	.....	Grapenuts—cream	
Egg.....	50	1½	6.7	5.2	.....	Omelet—bacon	
Bread.....	120	4	11.6	0.2	64.2	Toast—butter	
Butter.....	65	2	.....	53.2	.....	Coffee—sugar	
Cream.....	160	5½	3.4	57.8	4.2		
Sugar.....	85	2½	.....	.....	85.0	Dinner:	
						Grapefruit—sugar	
Grapefruit...	300	10	2.3	0.6	30.2	Cream of pea soup	
Pea soup....	125	4	6.2	8.4	14.0	Roast chicken	
Chicken.....	100	3½	32.1	4.4	.....	Sweet potatoes	
Lima beans..	80	2½	6.4	0.5	23.6	Lima beans	
Corn on cob.	100	3½	3.0	1.1	18.8	Corn on cob	
Sweet potato.	60	2	1.5	9.5	31.0	Tomato salad	
Lettuce.....	24	1	0.2	0.4	0.6	Charlotte russe	
Tomato.....	150	5	1.3	0.6	5.8	Coffee	
Oil.....	35	1	.....	35.0	.....	Supper:	
Charlotte						Broiled sweetbread	
russe.....	25	1	2.0	6.4	32.2	—cream sauce	
						Biscuit—butter	
Sweetbreads..	100	3½	16.8	12.1	.....	Date and cheese	
Biscuit.....	46	1½	3.8	5.2	19.9	salad	
Dates.....	28	1	2.8	0.2	48.2	Peaches—cream	
Cheese.....	40	1½	2.5	3.2	0.2	Chocolate cake	
Peaches.....	100	3½	0.7	0.1	9.4		
Cake.....	70	2½	4.3	5.6	44.8		
Chocolate....	180	6	6.8	13.3	26.0		
			127.1	246.0	539.4		
This diet was planned for fall season.							Calories
The following foods may be substituted							P... 521.11
for other seasons:							F... 2287.80
							CH... 2211.54
							Total 5020.45
The object considered is to get							
nourishing concentrated foods,							
with as little bulk as possible.							
Fruits:							
Strawberries	100	3½	1.0	0.6	7.4		
Prunes.....	100	3½	0.9	.....	18.9		
Pineapple...	100	3½	0.4	0.3	9.7		
Baked apple	120	4	0.6	0.5	29.3		
Vegetables:							
Green peas.	92	3	6.1	3.1	13.4		
Canned corn	100	3½	2.8	1.2	19.0		
Creamed							
celery.....	90	3	1.4	4.9	3.4		

COMMENT ON THE FIVE THOUSAND CALORIE DIET

In certain conditions it is necessary to increase the food intake much above the average allowance. This is especially true in many cases of exophthalmic goiter with malnutrition. When there is a tendency to diarrhea or intestinal indigestion it is usually best to reduce the fruit and vegetable allowance, and to substitute cereals or extra bread and butter. This diet, of course, may be modified in detail so that the daily routine shall not become monotonous, keeping however approximately to the same amounts of corresponding caloric value.

LOW-CALCIUM DIET

Boiled meat.....	250 gm. (8 $\frac{1}{3}$ oz.)
Bread.....	100 gm. (3 $\frac{1}{3}$ oz.)
Fish.....	100 gm. (3 $\frac{1}{3}$ oz.)
Potatoes.....	100 gm. (3 $\frac{1}{3}$ oz.)
Apple.....	100 gm. (3 $\frac{1}{3}$ oz.)
Sugar.....	50 gm. (1 $\frac{2}{3}$ oz.)
Butter.....	50 gm. (1 $\frac{2}{3}$ oz.)
Tea (with cream).....	100 gm. (3 $\frac{1}{3}$ oz.)
Calcium content, 0.315 gm. (4.6 grains).	

Protein, 80 gm. (1 $\frac{2}{3}$ oz.); fat, 100 gm. (3 $\frac{1}{3}$ oz.); carbohydrate, 145 gm. (5 oz.); calories, 2000.

FIXED NITROGEN, CALCIUM, MAGNESIUM DIET

(VOGEL)

*(Twenty-four-hour Amount)*Milk..... 500 gm. (16 $\frac{2}{3}$ oz.)

Eggs..... 300 gm. (10 oz.)

Cream..... 300 gm. (10 oz.)

Rice, uncooked..... 100 gm. (3 $\frac{1}{3}$ oz.)

N in twenty-four-hour amounts, 8.138 gm. CaO in twenty-four-hour amounts, 1.214 gm. MgO in twenty-four-hour amounts, 0.175 gm. Calories, 1900.

COMMENTS ON LOW-CALCIUM DIET

This was designed by Dr. C. G. L. Wolf, of the Cornell Medical School, at the suggestion of my colleague, Dr. David Bovaird, Jr., who conceived the idea that cases of chronic deforming arthritis might be greatly benefited by reducing the calcium intake, on the theory that the disease is due to a disturbed calcium metabolism. This has been used in a number of cases, both at the Presbyterian and Lincoln Hospitals, New York, and, while it has not resulted in any cures, some of the patients have been greatly relieved of their pain while on the diet. Its monotony is its worst feature, and one can seldom get patients to continue its use for long at a time. Theoretically, tetany might seem a possible consequence of withdrawing the calcium from the diet, but in one case in which Bovaird used this diet for many months there was no evidence of this.

122 FIXED NITROGEN, CALCIUM, MAGNESIUM DIET

The diet, moreover, is of scientific value to anyone desiring to study calcium metabolism.

The fixed nitrogen, calcium, magnesium diet has been used exclusively for research work, and is an accurate analysis of the food stuffs composing the diet in these three particulars.

REGULAR CONVALESCENT CHILDREN'S DIET (TWO TO FIVE YEARS)¹

Breakfast.

- 8 A. M.: Cereal, 50 gm. ($1\frac{2}{3}$ oz.).
Toast 22 gm. (1 oz.). Butter, 4 gm.
($\frac{1}{8}$ oz.).
Egg, (1).
Milk, 250 c.c. (8 oz.).
10 A. M.: Orange juice, 60 c.c. (2 oz.).

Dinner.

- 12 NOON: Broth, 200 c.c. (7 oz.).
Meat, 15 gm. ($\frac{1}{2}$ oz.).
Baked Potato. Rice, 50 gm. ($1\frac{2}{3}$ oz.).
Green vegetable (spinach, carrots, peas,
string beans, or parsnips) strained 50 gm.
($1\frac{2}{3}$ oz.).
Pudding and ice-cream, 50 gm. ($1\frac{2}{3}$ oz.).
2 P. M.: Cocoa, 200 c.c. (7 oz.).

¹ H. H. Mason.

Supper.

- 5 P. M.: Cereal, 50 gm. ($1\frac{2}{3}$ oz.). Bran muffin, 22 gm. (1 oz.). Butter, 4 gm. ($\frac{1}{8}$ oz.).
Milk, 250 c.c. (8 oz.).
Stewed fruit, 50 gm. ($1\frac{2}{3}$ oz.).
- 8 P. M.: Milk or broth, 200 c.c. (7 oz.).

Approximate Values to be Given

Protein.....	52 gm. ($1\frac{2}{3}$ oz.)	213.5 calories
Fat.....	52 gm. ($1\frac{2}{3}$ oz.)	483.6 calories
Carbohydrate ...	186 gm. (6 oz.)	762.6 calories
		1459.7

**SPECIAL DIET FOR CHILDREN (TWO TO FIVE YEARS) CON-
VALESCING FROM DIARRHEAL DISEASES¹**

Breakfast.

- 8 A. M.: White cereal, 60 gm. (2 oz.).
Toast, 22 gm. (1 oz.). Milk, 250 c.c. (8 oz.).

Dinner.

- 12 NOON: Coddled egg (1).
Rice or rice pudding, 50 gm. (2 oz.).
Dry bread, 22 gm. (1 oz.). Broth, 200 c.c. (7 oz.).
- 2 P. M.: Beef juice, 30-60 c.c. (1-2 oz.).

¹ H. H. Mason.

Supper.

- 5 P. M.: White cereal, 50 gm. (1 oz.). Zwiebach, 10 gm. ($\frac{1}{8}$ oz.).
 Custard or junket, 50 gm. (2 oz.).
 Milk, 250 c.c. (8 oz.).
- 8 P. M.: Milk or broth, 200 c.c. (7 oz.).

Approximate Values to be Given

Protein.....	43 gm. ($1\frac{1}{8}$ oz.).	176.3 calories
Fat.....	41 gm. ($1\frac{1}{8}$ oz.).	381.3 calories
Carbohydrate..	113 gm. ($3\frac{3}{8}$ oz.).	463.3 calories
		1020.9 calories

SPECIAL DIABETIC RECIPES¹

DIABETIC BREAD AND BISCUIT

AKOLL Biscuit (Huntley and Palmer).

Carbohydrate, 2.7 per cent.; nitrogen, 7 per cent.

Each biscuit weighs 5.1 gm. and contains 0.14 gm. carbohydrate and 0.41 gm. nitrogen.

Gluten meal biscuit, made from Barker's Gluten Food A, to be had of Herman B. Barker, Somerville, Mass.

Carbohydrate not over 4 per cent.; nitrogen, 13 per cent.

Soja-bean meal biscuit from Soja-bean meal, to be had of Thomas Metcalf Company, Boston, Mass.

Protein ($N. \times 6.25$), 44.64 per cent.; fat, 19.43 per cent.; cane-sugar, 9.34 per cent.; starch, none.

Casoid biscuit, to be had of Thomas Leeming & Co., New York City.

Carbohydrate, 8 per cent.; nitrogen, 10 per cent.

Pure gluten biscuit and potato gluten biscuit, to be had of Battle Creek Sanitarium Food Company.

Carbohydrate, 10 per cent.; nitrogen, 12 per cent.

Protopuff No. 1, Health Food Company, New York.

Carbohydrate, 10 per cent.; nitrogen, 12 per cent.

DIABETIC MILK (WRIGHT'S)

Definite quantity of milk diluted with three to four volumes distilled water, to which 1 or 2 : 1000 glacial

¹ T. C. Janeway in Musser and Kelly, Practical Therapeutics.

acetic acid has been added (6-12 c.c., dr. $1\frac{1}{2}$ -3, glacial acetic acid; 1 pint or 500 c.c. water). This precipitates all casein and fat.

Allow to settle, then strain through calico. Wash repeatedly. Redissolve curd in a 1 per cent. solution of the following mixture, enough to make the original amount of milk:

Sodium chlorid.....	11.5
Potassium chlorid.....	9.9
Monopotassium phosphate.....	13.8
Dipotassium phosphate.....	10.0
Citrate of potassium.....	5.9
Dimagnesium phosphate.....	4.0
Magnesium citrate.....	4.4
Dicalcium phosphate.....	8.0
Tricalcium phosphate.....	9.6
Calcium citrate.....	25.5
Calcium oxid.....	5.5
Sodium carbonate.....	40.0

Analysis of Wright's Diabetic Milk¹

Specific gravity, 1011.

Ash.....	0.200 per cent.
Fat.....	3.600 per cent.
Protein.....	1.907 per cent.
Carbohydrate.....	0.015 per cent.

Total solids.....	5.722 per cent.
NaCl.....	0.110 per cent.

¹ Granat₂

MISCELLANEOUS RECIPES

RAISED BRAN BISCUITS:

2 cups of bran.

1 cup of entire wheat flour.

Butter, salt, and baking powder.

$\frac{1}{2}$ cup of molasses, more or less to taste.

$1\frac{1}{2}$ cups of milk.

Bake for one hour in gems, in slow oven.

(Eat one to three a day, when stale.)

BRAN CRACKERS (FOORD):

Butter, 2 cups.

Buttermilk, $\frac{3}{4}$ cup.

Molasses (or honey), $\frac{3}{4}$ cup.

White flour, 1 pint.

Baking soda, 2 teaspoonfuls.

Bran, $1\frac{1}{4}$ quarts.

Bake in flat crackers, $\frac{1}{4}$ inch thick and 2 inches wide.

CREAM OF PEA SOUP:

Canned peas, $\frac{1}{3}$ cup.

Salt.

Water, $1\frac{1}{2}$ oz. (45 c.c.).

Milk, 6 oz. (180 c.c.).

Butter, 1 dram (4 gm.).

Flour, 1 dram (4 gm.).

Lactose, 1 dram (4 gm.).

Boil first three ingredients, strain, and add milk, melted butter, flour, and lactose; season. Bring to the boiling-point and strain.

30 c.c. (1 oz.) equals protein 2.6 gm. Calories, 32.

BLACK BEAN SOUP:

Black beans, 2 tablespoonfuls.

Cold water, 1 cup.

Seasoning—onion, celery salt, salt, and pepper.

Boil beans with water, strain, and add—

Milk, $\frac{2}{3}$ cup.

Butter, 2 drams (8 gm.).

Flour, 1 dram (4 gm.).

Salt and pepper, q. s.

30 c.c. (1 oz.) equals protein 1.98. Calories, 40.

LACTOSE JELLY:

Gelatin, $\frac{1}{2}$ teaspoonful

Cold water, 2 teaspoonfuls

Orange juice, $1\frac{1}{2}$ oz.

Lemon juice, 1 teaspoonful

Cane-sugar, $1\frac{1}{2}$ teaspoonfuls.

Sherry, 1 teaspoonful.

Lactose, 3 tablespoonfuls ($1\frac{1}{2}$ oz.).

Boiling water, $1\frac{1}{2}$ oz.

} 1 portion.

Lactose is boiled in water until clear. Pour over soaked gelatin to dissolve and add other parts. Strain through double gauze and chill.

May also be flavored with grape or raspberry juice.

ARTIFICIAL BUTTERMILK:

1 quart fresh milk (fat-free preferable). Sterilize at temperature of 212° F. for twenty minutes. Cool to 98° F. and put in sterile bottle. Add 1 tube (1 c.c.) of lactobacillin (The Ferment Co.). Allow to stand at temperature of 95° F. for twenty-four hours. Beat thoroughly with Dover egg-beater and chill.

For large quantity, use $\frac{1}{2}$ bottle of lactobacillin to one can of milk.

PROTEIN MILK (EIWEISSMILCH)

Heat 1 quart of whole milk to 100° F. Add 4 teaspoonfuls of essence of pepsin and stir. Let the mixture stand at 100° F. until the curd has formed. Put the mass in a linen cloth and strain off the whey from the curd. Remove the curd from the linen cloth and press it through a rather fine sieve two or three times by means of a wooden mallet or spoon. Add 1 pint of water (500 c.c.) to the curd during this process. The mixture should now look like milk, and the precipitate must be very finely divided. Add 1 pint of buttermilk to this mixture.

The composition of this food is:

Fats.....	2.5 per cent.
Sugar.....	1.5 per cent.
Protein.....	3.0 per cent.
Salt.....	0.5 per cent.

1 quart of this milk contains about 370 calories.

KELLER'S MALT SOUP

2 oz. (60 gm.) of wheat flour are mixed with 11 oz. (330 c.c.) of whole milk and then passed through a sieve. In a second vessel 3 oz. (90 c.c.) of extract of malt are mixed with 20 oz. (600 c.c.) of warm water. The two mixtures are then poured into a porcelain vessel, $2\frac{1}{2}$ dr. (10 gm.) of 11 per cent. carbonate of potassium added, and the whole cooked with constant stirring for twenty minutes, and then brought to a momentary boil; any loss through heat is made up by the addition of boiled water.

The composition of this food is:

Fat.....	1.20 per cent.
Protein.....	2.00 per cent.
Carbohydrate.....	12.00 per cent.
Caloric value, 800 to the liter (quart).	

LACTOSE ICE-CREAM

Cream.....	120 c.c. (4 oz.)
Lactose.....	30 gm. (1 oz.)
Boiling water.....	30 c.c. (1 oz.)
Cane-sugar.....	4 gm. (1 dr.)
Salt.....	1 gm. ($\frac{1}{4}$ dr.)
Vanilla.....	1 gm. ($\frac{1}{4}$ dr.)
Or,	
Sherry.....	15 c.c. ($\frac{1}{2}$ oz.)

Boil lactose and water two minutes or until clear. Mix with other ingredients. Freeze. Equals 390 calories.

MARTIN'S MILK

Milk, 1 pint (500 c.c.).

Rennin, $\frac{1}{2}$ gm., $7\frac{1}{2}$ grains, or liquid rennet, 1 dram (4 c.c.). Heat milk to 98° F. Add rennin dissolved in cold water. Allow to coagulate. Beat thoroughly with dover beater. Season with salt and chill.

DELAFIELD'S MILK MIXTURE

Feeding in nausea:

Cream.....	120 c.c. (4 oz.)
Milk.....	120 c.c. (4 oz.)
Vichy.....	120 c.c. (4 oz.)
Soda bicarbonate.....	$1\frac{1}{3}$ gm. (20 gr.)
Cerium oxalate.....	$\frac{2}{3}$ gm. (10 gr.)

COMMENTS ON MISCELLANEOUS RECIPES

The list of food stuffs taken from Bulletin 28 of the Department of Agriculture is indispensable in reckoning the protein, fat, and carbohydrate values of foods as well as their caloric value.

The special recipes are appended and will be found useful. Those for diabetics speak for themselves, while the lactose jelly and ice-cream will be found a convenient method for palatably exhibiting a good number of calories.

Delafield's mixture is often serviceable in the feeding of gastric cases accompanied by much nausea and vomiting, beginning with dram doses every twenty minutes and gradually increasing the dose, and later lengthening the intervals.

In Eiweissmilch (protein milk) we have a preparation of German origin which is useful, at times, in conditions of intestinal disturbance associated with diarrhea. It has been used, as has Keller's malt soup, particularly in the feeding of children, but either may be of great use in the care of adults where milk, either alone or with the usual admixtures, is not well borne.

Fisher's table of "standard portions" of 100 calories each, forms the basis for the easy computation and construction of any of the diets. The addition of the actual amount of protein, fat, and carbohydrate in the individual portions simplifies the determination of the amounts of these food elements in any one of the foods listed.

Thus, if, for example, we wish to figure the actual amount of food for a day's ration in an anticonstipation diet, we take the fraction or multiples of 100 calories of the foods called for. Slight rearrangements are often necessary to keep to the approximate values set for the different diets; the following is an example of the method for using this table—*e.g.*, for anticonstipation breakfast.

	Calories	Protein gm.	Fat gm.	Carbohydrate gm.
Apple (1) (early A. M.)	50	0.3	0.3	11.0
Oatmeal.....	100	4.4	0.8	8.2
Molasses.....	200	1.6	...	48.0
Biscuit (johnny cake).	200	6.0	3.4	35.0
Egg.....	100	7.9	7.2	
Apple (1).....	50	0.3	0.3	11.0
Prunes.....	200	1.4	...	46.8
Butter.....	100	...	10.6	
	1000	21.9	22.6	160.0

AVERAGE WEIGHTS FOR MEN AND WOMEN
AS COMPILED BY THE METROPOLITAN LIFE INSURANCE
COMPANY

<i>Men</i>		<i>Women</i>	
Height, ft. in.	Weight, lbs.	Height, ft. in.	Weight, lbs.
5 1.....	120	4 10.....	108
5 2.....	125	4 11.....	112
5 3.....	130	5 0.....	114
5 4.....	135	5 1.....	118
5 5.....	141	5 2.....	123
5 6.....	145	5 3.....	126
5 7.....	150	5 4.....	129
5 8.....	154	5 5.....	133
5 9.....	159	5 6.....	137
5 10.....	164	5 7.....	142
5 11.....	169	5 8.....	146
6 0.....	175	5 9.....	150
6 1.....	181	5 10.....	154
6 2.....	188	5 11.....	158

AVERAGE CHEMICAL COMPOSITION OF AMERICAN FOODS

FROM ATWATER AND BRYANT (ABSTRACT), UNITED STATES DEPARTMENT OF AGRICULTURE

(Bulletin No. 28, 1906)

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories per 100 gm. ¹
A. BEEF.	Per cent.	Per cent.	Per cent.	Per cent.	
<i>Fresh:</i>					
Chuck, including shoulder...	65.0	19.2	15.4	....	222
Loin.....	61.3	19.0	19.1	....	255
Sirloin butt, as purchased...	62.5	19.7	17.7	....	246
Porterhouse steak.....	60.0	21.9	20.4	....	280
Ribs.....	57.0	17.8	24.6	....	302
Round.....	67.8	20.9	18.6	....	184
<i>Beef Organs:</i>					
Brain.....	80.6	8.8	9.3	....	122
Kidney.....	76.7	16.6	4.8	0.4	115
Beef liver.....	71.2	20.4	4.5	1.7	133
Sweetbreads, as purchased...	70.9	16.8	12.1	....	181
Tongue.....	70.8	18.9	9.2	....	163
<i>Cooked:</i>					
Roast, as purchased.....	48.2	22.3	28.6	....	357
Round steak, fat removed, as purchased.....	63.0	27.6	7.7	....	185
Loin steak:					
Tenderloin, broiled.....	54.8	23.5	20.4	....	287
<i>Canned:</i>					
Boiled beef, as purchased...	51.8	25.5	22.5	....	314
Corned beef.....	51.8	26.3	18.7	....	282
Roast beef, as purchased....	58.9	25.9	14.8	....	243

¹ Locke, Food Values.

CHEMICAL COMPOSITION OF AMERICAN FOODS 135

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories per 100 gm.
B. VEAL.	Per cent.	Per cent.	Per cent.	Per cent.	
<i>Fresh:</i>					
Breast.....	68.2	20.3	11.0	....	185
Leg.....	71.7	20.7	6.7	....	146
Loin.....	69.5	19.9	10.0	....	174
Rib.....	69.8	20.2	9.4	....	170
Shoulder and flank, medium fat.....	65.2	19.7	14.4	....	215
Kidney, as purchased.....	75.8	16.9	6.4	....	129
C. LAMB.					
<i>Fresh:</i>					
Breast or chuck.....	56.2	19.1	23.6	....	298
Leg, hind.....	58.6	18.6	22.6	....	287
Shoulder.....	51.8	18.1	29.7	....	351
Forequarter.....	55.1	18.3	25.8	....	315
Hindquarter.....	60.9	19.6	19.1	....	258
<i>Cooked:</i>					
Chops, broiled.....	47.6	21.7	29.9	....	367
Leg, roast.....	67.1	19.7	12.7	....	198
D. MUTTON.					
<i>Fresh:</i>					
Chuck, lean.....	64.7	17.8	16.3	....	225
Leg, hind.....	63.2	18.7	17.5	....	239
Shoulder.....	60.2	17.5	21.8	....	274
Forequarter.....	52.9	15.6	30.9	....	352
<i>Cooked:</i>					
Mutton, leg, roast.....	50.9	25.0	22.6	....	313
E. PORK.					
<i>Fresh:</i>					
Ham.....	50.1	15.7	33.4	....	375
<i>Pickled, salted, and smoked:</i>					
Ham, smoked, boiled, as pur- chased.....	51.3	20.2	22.4	....	291
fried, as purchased.....	36.6	22.2	33.2	....	400
Bacon, smoked.....	20.2	10.5	64.8	....	646

136 CHEMICAL COMPOSITION OF AMERICAN FOODS

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories per 100 gm.
F. SAUSAGE (as purchased).	Per cent.	Per cent.	Per cent.	Per cent.	
Bologna.....	55.2	18.2	19.7	....	258
Frankfort.....	57.2	19.6	18.6	1.1	258
Pork.....	39.8	13.0	44.2	1.1	468
sausage meat.....	46.2	17.4	32.5	....	374

G. POULTRY.

Fresh:

Chicken, broiler.....	69.7	20.7	8.3	....	196
young, dark meat.....	70.1	20.8	8.2	....	187
light meat.....	70.3	21.9	7.4	....	184
Duck, breast.....	73.9	22.3	2.3	....	151
Guinea-hen meat, not includ- ing giblets.....	68.9	23.4	6.5	....	191
Pheasant meat, not including giblets.....	70.0	24.7	4.6	....	180
Pigeon meat, not including giblets.....	63.2	22.9	12.1	....	243
Quail meat, not including giblets.....	66.3	25.4	7.0	....	208
Squabs, meat, not including giblets.....	56.6	18.5	23.8	....	324
Turkey, dark meat.....	57.0	21.4	20.6	....	316
cooked.....	53.7	39.2	4.3	....	265
light meat.....	63.9	25.7	9.4	....	235
cooked.....	58.5	34.6	4.9	....	240

Preserved Poultry Meat:

Potted turkey.....	56.0	17.2	22.0	....	306
chicken.....	56.1	19.4	20.3	....	306
Canned chicken soup.....	87.1	2.9	3.3	5.1	66
gumbo soup.....	91.0	2.4	0.2	4.8	35
boned chicken.....	57.6	27.7	12.8	....	274

H. FISH.

Fresh:

Cod, whole.....	82.6	16.5	0.4	1.2	103
Bass, black, whole.....	76.7	20.6	1.7	1.2	103
sea, whole.....	79.3	19.8	0.5	1.4	86
striped, whole.....	77.7	18.6	2.8	1.2	102
Blackfish, whole.....	79.1	18.7	1.3	1.1	89

CHEMICAL COMPOSITION OF AMERICAN FOODS 137

Food Material.	Water. Per cent.	Protein. Per cent.	Fat. Per cent.	Carbohy- drates. Per cent.	Calories per 100 gm.
<i>Fresh:</i>					
Bluefish, entrails removed...	78.5	19.4	1.2	1.3	90
Butterfish, whole.....	70.0	18.0	11.0	1.2	176
Eels, salt water.....	71.6	18.6	9.1	1.0	161
Haddock, entrails removed...	81.7	17.2	0.3	1.2	74
Halibut, steak or sections...	75.4	18.6	5.2	1.0	125
Herring, whole.....	72.5	19.5	7.1	1.5	146
Mackerel, whole.....	73.4	18.7	7.1	1.2	142
Perch, white, whole.....	75.7	19.3	4.0	1.2	117
as purchased.....	28.4	7.3	1.5	0.4	44
yellow, whole.....	79.3	18.7	0.8	1.2	84
Pickarel, pike, whole.....	79.8	18.7	0.5	1.1	81
Pike, gray, whole.....	80.8	17.9	0.8	1.1	80
Pompano, whole.....	72.8	18.8	7.5	1.0	147
Pogy (scup), whole.....	75.0	18.6	5.1	1.4	123
Salmon, whole.....	64.6	22.0	12.8	1.4	209
Shad, whole.....	70.6	18.8	9.5	1.3	165
roe, as purchased.....	71.2	20.9	3.8	1.5	133
Smelt, whole.....	79.2	17.6	1.8	1.7	89
Spanish mackerel, whole....	68.1	21.5	9.4	1.5	175
Trout, brook, whole.....	77.8	19.2	2.1	1.2	98
<i>Preserved and canned:</i>					
Cod, salt.....	53.5	25.4	0.3	....	90
Herring, smoked.....	34.6	36.9	15.8	....	299
Mackerel, salt, dressed.....	43.4	17.3	26.4	....	316
Salmon, canned.....	63.5	21.8	12.1	....	201
Sardines, canned.....	52.3	23.0	19.7	....	278
<i>Shellfish, etc., Fresh:</i>					
Clams, round, removed from shell, as purchased.....	80.8	10.6	1.1	5.2	75
Oysters, solids, as purchased...	88.3	6.0	1.3	3.3	51
Scallops, as purchased.....	80.3	14.8	0.1	3.4	76

I. EGGS.

Hens', uncooked.....	73.7	13.4	10.5	....	159
boiled.....	73.2	13.2	12.0	....	169
whites.....	86.2	12.3	0.2	....	55
yolks.....	49.5	15.7	33.3	....	376
Egg, boiled, 1 egg (50 gm.)...	36.6	6.6	6.0	....	169
Total, 1 egg...					83

138 CHEMICAL COMPOSITION OF AMERICAN FOODS

Food Material.	Water. Per cent.	Protein. Per cent.	Fat. Per cent.	Carbohy- drates. Per cent.	Calories per 100 gm.
J. DAIRY PRODUCTS, ETC. (As Purchased).					
Butter.....	11.0	1.0	85.0	....	795
Buttermilk.....	91.0	3.0	0.5	4.8	36
Cheese, American, pale.....	31.6	28.8	35.9	0.3	453
red.....	28.6	29.6	38.3	....	477
California flat.....	34.0	24.3	33.4	4.5	429
Cheddar.....	27.4	27.7	36.8	4.1	473
Cheshire.....	37.1	26.9	30.7	0.9	399
Cottage.....	72.0	20.9	1.0	4.3	112
Dutch.....	35.2	37.1	17.7	....	316
Full cream.....	34.2	25.9	33.7	2.4	430
Limburger.....	42.1	23.0	29.4	0.4	369
Neuchatel.....	50.0	18.7	27.4	1.5	337
Roquefort.....	29.3	22.6	29.5	1.8	375
Swiss.....	31.4	27.6	24.9	1.3	443
Cream.....	74.0	2.5	18.5	4.5	201
Koumiss.....	89.3	2.8	2.1	5.4	53
Milk, condensed, sweetened..	26.9	8.8	8.3	54.1	335
unsweetened (evapor- ated cream).....	68.2	9.6	9.3	11.2	172
skimmed.....	90.5	3.4	0.3	5.1	37
whole.....	87.0	3.3	4.0	5.0	72
whey.....	93.0	1.0	0.3	5.0	28

K. MISCELLANEOUS (As Purchased).

Beef-juice.....	93.0	4.9	0.6	....	25
Calf's-foot jelly.....	77.6	4.3	....	17.4	89
Oleomargarine.....	9.5	1.2	83.0	....	777

VEGETABLE FOOD.

A. FLOUR, MEALS, ETC.

Barley meal and flour.....	11.9	10.5	2.2	72.8	362
Buckwheat flour.....	13.6	6.4	1.2	77.9	357
Cornmeal, granular.....	12.5	9.2	1.9	75.4	365
Corn Preparations:					
Cerealine.....	10.3	9.6	1.1	78.3	370
Hominy.....	11.8	8.3	0.6	79.0	364
cooked.....	79.3	2.2	0.2	17.8	84

CHEMICAL COMPOSITION OF AMERICAN FOODS 139

Food Material.	Water. Per cent.	Protein. Per cent.	Fat. Per cent.	Carbohy- drates. Per cent.	Calories per 100 gm.
Oatmeal.....	7.3	16.1	7.2	67.5	410
boiled.....	84.5	2.8	0.5	11.5	63
gruel.....	91.6	1.2	0.4	6.3	34
water.....	96.0	0.7	0.1	2.9	15
Rolled oats.....	7.7	16.7	7.3	66.2	408
Rice.....	12.3	8.0	0.3	79.0	359
boiled.....	72.5	2.8	0.1	24.4	112
flaked.....	9.5	7.9	0.4	81.9	371
flour.....	8.5	8.6	6.1	68.0	370
Rye flour.....	12.9	6.8	0.9	78.7	359
meal.....	11.4	13.6	2.0	71.5	367
Wheat, entire.....	11.4	13.8	1.9	71.9	369
gluten.....	12.0	14.2	1.8	71.1	367
Graham.....	11.3	13.3	2.2	71.4	368
Prepared (self-raising).....	10.8	10.2	1.2	73.0	353
Wheat Preparations:					
Cracked and crushed.....	10.1	11.1	1.7	75.5	371
Farina.....	10.9	11.0	1.4	76.3	371
Flaked.....	8.7	13.4	1.4	74.3	373
Gems.....	10.4	10.5	2.0	76.0	374
Glutens.....	8.9	13.6	1.7	74.6	378
Macaroni.....	10.3	13.4	0.9	74.1	367
cooked.....	78.4	3.0	1.5	15.8	91
Noodles.....	10.7	11.7	1.0	75.6	367
Shredded.....	8.1	10.5	1.4	77.9	375
Spaghetti.....	10.6	12.1	0.4	76.3	366
Vermicelli.....	11.0	10.9	2.0	72.0	358

B. BREAD, CRACKERS, PASTRY, ETC. (As Purchased).

Bread:

Brown.....	43.6	5.4	1.8	47.1	231
Corn (johnny cake).....	38.9	7.9	4.7	46.3	266
Rye.....	35.7	9.0	0.6	53.2	260
Wheat:					
Buns.....	29.0	6.3	6.5	57.3	321
Cinnamon.....	23.6	9.4	7.2	59.1	347
Currant.....	27.5	6.7	7.6	57.6	334

140 CHEMICAL COMPOSITION OF AMERICAN FOODS

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories
VEGETABLE FOOD.	Per cent.	Per cent.	Per cent.	Per cent.	per 100 gm.
Bread, Wheat: Hot cross.	36.7	7.9	4.8	49.7	281
Graham.	35.7	8.9	1.8	52.1	267
Biscuit, home made.	32.9	8.7	2.6	55.3	287
soda.	22.9	9.3	13.7	52.6	381
Rolls, French.	32.0	8.5	2.5	55.7	287
Vienna.	31.7	8.5	2.2	56.5	287
White, biscuit.	35.2	8.0	1.4	54.3	269
home-made.	35.6	9.1	1.6	53.3	270
all analyses.	35.3	9.2	1.3	53.1	268
Whole wheat.	38.4	9.7	0.9	49.7	251
Zwieback.	5.8	9.8	9.9	73.5	434
Crackers:					
Soda.	5.9	9.8	9.1	73.1	424
Boston (split).	7.5	11.0	8.5	71.1	416
Egg.	5.8	12.6	14.0	66.6	454
Graham.	5.4	10.0	9.4	73.8	429
Oatmeal.	6.3	11.8	11.1	69.0	434
Oyster.	4.8	11.3	10.5	70.5	433
Pretzels.	9.6	9.7	3.9	72.8	375
Saltines.	5.6	10.6	12.7	68.5	442
Water.	6.4	11.7	5.0	75.7	405
All analyses.	6.8	10.7	8.8	71.9	420
Cake:					
Bakers'	31.4	6.3	4.6	59.9	302
Chocolate layer.	20.5	6.2	8.1	64.1	364
Drop.	16.6	7.6	14.7	60.3	316
Frosted.	18.2	5.9	9.0	64.8	374
Fruit.	17.3	5.9	10.9	64.1	388
Gingerbread.	18.8	5.8	9.0	63.5	368
Sponge.	15.3	6.3	10.7	65.9	396
Cookies, Cakes, etc.:					
Mollasses cookies.	6.2	7.2	8.7	75.7	421
Sugar cookies.	8.3	7.0	10.2	73.2	423
Ginger snaps.	6.3	6.5	8.6	76.0	418
Lady fingers.	15.0	8.8	5.0	70.6	371
Macaroons.	12.3	6.5	15.2	65.2	435
Doughnuts.	18.3	6.7	21.0	53.1	441

CHEMICAL COMPOSITION OF AMERICAN FOODS 141

Food Material.	Water. Per cent.	Protein. Per cent.	Fat. Per cent.	Carbohy- drates. Per cent.	Calories per 100 gm.
Pie:					
Apple.....	42.5	3.1	9.8	42.8	280
Cream.....	32.0	4.4	11.4	51.2	334
Custard.....	62.4	4.2	6.3	26.1	183
Lemon.....	47.4	3.6	10.1	37.4	262
Mince.....	41.3	5.8	12.3	38.1	294
Squash.....	64.2	4.4	8.4	21.7	185
Puddings:					
Rice custard.....	59.4	4.0	4.6	31.4	182
Indian meal.....	60.7	5.5	4.8	27.5	180
Tapioca.....	64.5	3.3	3.2	28.2	159
Tapioca with apple.....	70.1	0.3	0.1	29.3	122
Ice-cream.....	66.9	5.2	10.1	17.7	189

C. SUGARS, STARCHES, ETC. (As Purchased)

Candy.....	....	....	96.0	391
Honey.....	18.2	0.4	81.2	335
Mollasses, cane.....	25.1	2.4	69.3	284
Starch, tapioca.....	11.4	0.4	88.0	364
Sugar, coffee or brown.....	....	....	95.0	389
granulated.....	....	....	100.0	410
maple.....	....	....	82.8	339
powdered.....	....	....	100.0	410

D. VEGETABLES.

Artichokes, as purchased.....	79.5	2.6	0.2	16.7	80
Asparagus, cooked, as pur- chased.....	91.1	2.1	3.3	2.2	48
Beans, butter, green.....	58.9	9.4	0.6	29.1	163
String beans, cooked.....	95.3	0.8	1.1	1.9	21
fresh, as purchased.....	83.0	2.1	0.3	6.9	40
Beets, cooked.....	88.6	2.3	0.1	7.4	41
Cabbage.....	91.5	1.6	0.3	5.6	32
Carrots, fresh.....	88.2	1.1	0.4	9.3	46
Cauliflower, as purchased.....	92.3	1.8	0.5	4.7	31
Celery.....	94.5	1.1	0.1	3.3	19
Corn, green.....	75.4	3.1	1.1	19.7	104
Cucumbers.....	95.4	0.8	0.2	3.1	18

142 CHEMICAL COMPOSITION OF AMERICAN FOODS

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories per 100 gm.
VEGETABLE FOOD.	Per cent.	Per cent.	Per cent.	Per cent.	
Eggplant.....	92.9	1.2	0.3	5.1	29
Greens, beet, cooked, as pur- chased.....	89.5	2.2	3.4	3.2	54
Lentils, dried, as purchased....	8.4	25.7	1.0	59.2	357
Lettuce.....	94.7	1.2	0.3	2.9	20
Mushrooms, as purchased.....	88.1	3.5	0.4	6.8	46
Okra.....	90.2	1.6	0.2	7.4	39
Onions, fresh.....	87.6	1.6	0.3	9.9	49
prepared, as purchased.....	91.2	1.2	1.8	4.9	42
Parsnips.....	83.0	1.6	0.5	13.5	66
Peas, dried, as purchased.....	9.5	24.6	1.0	62.0	365
green.....	74.6	7.0	0.5	16.9	102
cooked, as purchased.....	73.8	6.7	3.4	14.6	119
Potatoes, raw or fresh cooked..	78.3	2.2	0.1	18.4	85
boiled, as purchased.....	75.5	2.5	0.1	20.9	97
cooked chips, as purchased..	2.2	6.8	39.8	46.7	589
mashed and creamed, as purchased.....	75.1	2.6	3.0	17.8	111
sweet, raw or fresh.....	69.0	1.8	0.7	27.4	126
cooked and prepared, as purchased.....	51.9	3.0	2.1	42.1	204
Pumpkins.....	93.1	1.0	0.1	5.2	26
Radishes.....	91.8	1.3	0.1	5.8	30
Rhubarb.....	94.4	0.6	0.7	3.6	23
Sauerkraut, as purchased.....	88.8	1.7	0.5	3.8	28
Spinach, fresh, as purchased....	92.3	2.1	0.3	3.2	24
cooked, as purchased.....	89.8	2.1	4.1	2.6	57
Squash.....	88.3	1.4	0.5	9.0	47
Tomatoes, fresh, as purchased..	94.3	0.9	0.4	3.9	23
Turnips.....	89.6	1.3	0.2	8.1	41
<i>Canned as Purchased.</i>					
Asparagus.....	94.4	1.5	0.1	2.8	19
Beans, baked.....	68.9	6.9	2.5	19.6	132
string.....	93.7	1.1	0.1	3.8	21
lima.....	79.5	4.0	0.3	14.6	79
red kidney.....	72.7	7.0	0.2	18.5	106
Brussels sprouts.....	93.7	1.5	0.1	3.4	21
Corn, green.....	76.1	2.8	1.2	19.0	103
Okra.....	94.4	0.7	0.1	3.6	19

CHEMICAL COMPOSITION OF AMERICAN FOODS 143

Food Material.	Water. Per cent.	Protein. Per cent.	Fat. Per cent.	Carbohy- drates. Per cent.	Calories per 100 gm.
Peas, green.....	85.3	3.6	0.2	9.8	56
Pumpkins.....	91.6	0.8	0.2	6.7	33
Squash.....	87.6	0.9	0.5	10.5	52
Succotash.....	75.9	3.6	1.0	18.6	103
Tomatoes.....	94.0	1.2	0.2	4.0	23

F. FRUITS, BERRIES.

Apples:

Edible portion.....	84.6	0.4	0.5	14.2	64
As purchased (refuse, 25.0).....	63.3	0.3	0.3	10.8	49

Apricots.....	85.0	1.1		13.4	59
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Bananas:

Edible portion.....	75.3	1.3	0.6	22.0	101
As purchased (refuse, 35.0).....	48.9	0.8	0.4	14.3	66

Blackberries, as purchased.....	86.3	1.3	1.0	10.9	15
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Cherries, as purchased.....	76.8	0.9	0.8	15.9	76
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Cranberries, as purchased.....	88.9	0.4	0.6	9.9	47
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Currants, as purchased.....	85.0	1.5		12.8	58
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Figs, fresh, as purchased.....	79.1	1.5		18.8	84
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Grapes, as purchased.....	58.0	1.0	1.2	14.4	74
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Huckleberries.....	81.9	0.6	0.6	16.6	76
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Lemons:

Edible portion.....	89.3	1.0	0.7	8.5	45
As purchased (refuse, 30.0).....	62.5	0.7	0.5	5.9	32

Muskmelons:

Edible portion.....	89.5	0.6		9.3	41
As purchased (refuse, 50.0).....	44.8	0.3		4.6	20

Nectarines.....	82.9	0.6		15.9	67
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Oranges:

Edible portion.....	86.9	0.8	0.2	11.6	53
As purchased (refuse, 27.0).....	63.4	0.6	0.1	8.5	37

Peaches:

Edible portion.....	69.4	0.7	0.1	9.4	42
As purchased (refuse, 18.0).....	73.3	0.5	0.1	7.7	34

Pears:

Edible portion.....	64.4	0.6	0.5	14.1	65
As purchased (refuse, 10.0).....	76.0	0.5	0.4	12.7	57

Pineapple.....	89.3	0.4	0.3	9.7	44
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144 CHEMICAL COMPOSITION OF AMERICAN FOODS

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories per 100 gm.
VEGETABLE FOOD.	Per cent.	Per cent.	Per cent.	Per cent.	
Prunes.....	79.6	0.9	....	18.9	81
Raspberries, as purchased....	85.8	1.0	....	12.6	56
Strawberries.....	90.4	1.0	0.6	7.4	40
Watermelons:					
Edible portion.....	92.4	0.4	0.2	6.7	31
As purchased (refuse, 59.4).....	37.5	0.2	0.1	2.7	13
<i>Dried.</i>					
Apples, as purchased.....	28.1	1.6	2.2	66.1	298
Apricots, as purchased.....	29.4	4.7	1.0	62.5	284
Citron, as purchased.....	19.0	0.5	1.5	78.1	336
Currants, as purchased.....	17.2	2.4	1.7	74.2	330
Dates.....	15.4	2.1	2.8	78.4	336
Figs, as purchased.....	18.8	4.3	0.3	74.2	325
Pears.....	16.5	2.8	5.4	72.9	360
Prunes.....	22.3	2.1	....	73.3	309
Raisins.....	14.6	2.6	3.3	76.1	354
<i>Canned and Jellies.</i>					
Preserves, etc., as purchased:					
Apples, crab.....	42.4	0.3	2.4	54.4	247
sauce.....	61.1	0.2	0.8	37.2	161
Apricots.....	81.4	0.9	....	17.3	75
Blackberries.....	40.0	0.8	2.1	56.4	254
Blueberries.....	85.6	0.6	0.6	12.8	61
Cherries.....	77.2	1.1	0.1	21.1	91
Figs, stewed.....	56.5	1.2	0.3	40.9	173
Marmalade (orange peel).....	14.5	0.6	0.1	84.5	349
Peaches.....	88.1	0.7	0.1	10.8	49
Pears.....	81.1	0.3	0.3	18.0	78
Strawberries, stewed.....	74.8	0.7	....	24.0	101
Prune sauce.....	76.6	0.5	0.1	22.3	95
G. NUTS.					
Almonds.....	4.8	21.0	54.9	17.3	668
Beechnut.....	4.0	21.9	57.4	13.2	678
Brazil nuts (<i>Bertholletia ex-</i> <i>celsa</i>), edible portion.....	5.3	17.0	66.8	7.0	720
Butternuts:					
<i>Juglans cinerea</i>	4.4	27.9	61.2	3.5	698

CHEMICAL COMPOSITION OF AMERICAN FOODS 145

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories per 100 gm.
	Per cent.	Per cent.	Per cent.	Per cent.	
Chestnuts:					
Edible portion.....	45.0	6.2	5.4	42.1	246
As purchased (refuse, 16.0) ..	37.8	5.2	4.5	35.4	208
Cocoanuts.....	14.1	5.7	50.6	27.9	608
Cocoanut, prepared, as pur- chased.....	3.5	6.3	57.4	31.5	689
Filberts.....	3.7	15.6	65.3	13.0	725
Hickory nuts.....	3.7	15.4	67.4	11.4	737
Lichi nuts.....	17.9	2.9	0.2	77.5	332
Peanuts:					
Edible portion.....	9.2	25.8	38.6	24.4	564
As purchased (refuse, 24.5) ..	6.9	19.5	29.1	18.5	427
Peanut butter, as purchased. .	2.1	29.3	46.5	17.1	623
Walnuts, California.....	2.5	18.4	64.4	13.0	728

H. MISCELLANEOUS.

Chocolate.....	5.9	12.9	48.7	30.3	631
Cocoa.....	4.6	21.6	28.9	37.7	511

UNCLASSIFIED FOOD MATERIALS.

ANIMAL AND VEGETABLE.

A. SOUPS.

Home Made (As Purchased).

Beef.....	92.9	4.4	0.4	1.1	26
Bean.....	84.3	3.2	1.4	9.4	65
Chicken.....	84.3	10.5	0.8	2.4	61
Chowder, clam.....	88.7	1.8	0.8	6.7	43
Meat stew.....	84.5	4.6	4.3	5.5	81

Canned (As Purchased).

Asparagus, cream of.....	87.4	2.5	3.2	5.5	63
Bouillon.....	96.6	2.2	0.1	0.2	11
Celery, cream of.....	88.6	2.1	2.8	5.0	55
Chicken.....	93.8	3.6	0.1	1.5	22
gumbo.....	89.2	3.8	0.9	4.7	43
Consommé.....	96.0	2.5	....	0.4	12
Corn, cream of.....	86.8	2.5	1.9	7.8	59
Julienne.....	95.9	2.7	....	0.5	13
Mock turtle.....	89.8	5.2	0.9	2.8	41

146 **CHEMICAL COMPOSITION OF AMERICAN FOODS**

Food Material.	Water.	Protein.	Fat.	Carbohy- drates.	Calories per 100 gm.
UNCLASSIFIED FOOD MATERIAL.	Per cent.	Per cent.	Per cent.	Per cent.	
Mulligatawny.....	89.3	3.7	0.1	5.7	40
Oxtail.....	88.8	4.0	1.3	4.3	46
Pea.....	86.9	3.6	0.7	7.6	52
cream of green.....	87.7	2.6	2.7	5.7	60
Tomato.....	90.0	1.8	1.1	5.6	41
Turtle, green.....	86.6	6.1	1.9	3.9	58
Vegetable.....	95.7	2.9	....	0.5	14

B. MISCELLANEOUS.

Hash.....	80.3	6.0	1.9	9.4	80
Mincemeat, commercial.....	27.7	6.7	1.4	60.2	288
home-made.....	54.4	4.8	6.7	32.1	214
Salad, ham.....	69.4	15.4	7.6	5.6	157
Sandwich, egg.....	41.4	9.6	12.7	34.5	299
chicken.....	48.5	12.3	5.4	32.1	232

STANDARD PORTIONS

147

STANDARD PORTIONS*

TABLE OF FOODS GIVING WEIGHT (IN GRAMS, OUNCES, AND ROUGH MEASURE OF A "STANDARD PORTION" OF EACH FOOD AND THE ACTUAL AMOUNT OF PROTEIN, FAT, AND CARBOHYDRATE IN EACH PORTION

Name of Food.	Portion containing 100 calories roughly described.	Weight of 100 calories.	Actual amount of protein, fat, and carbohydrate in each portion of 100 calories.†			
			Protein.	Fat.	Carbohydrate.	Cal.
		Gm.	Gm.	Gm.	Gm.	Gm.
COOKED MEATS.						
1 Beef, round, boiled (fat).....	Small serving.....	36	9.1	7.1		
1 Beef, round, boiled (lean).....	Large serving.....	62	17.1	4.7		
1 Beef, round, boiled (medium).....	Small serving.....	44	11.2	8.8		
1 Beef, ribs, boiled.....	Small serving.....	30	5.3	7.3		
1 Chicken, as purchased, canned.....	One thin slice.....	27	7.4	3.4		
1 Lamb chops, boiled, edible portion, average..	One small chop.....	27	5.8	8		
1 Lamb, leg roast.....	Ordinary serving.....	50	9.8	6.3		
1 Mutton, leg, boiled.....	Large serving.....	34	8.5	7.6		
1 Pork, ham, boiled (fat).....	Small serving.....	20.5	4.1	4.5		
1 Pork, ham, roasted (fat).....	Small serving.....	27	4.4	10.8		
1 Turkey, as purchased, canned.....	Small serving.....	28	3.7	8.4		
1 Veal, leg, boiled.....	Large serving.....	67.5	13.9	4.5		

* Irving Fisher, Journal American Medical Association, 1907, vol. xlviii, p. 1320.

† U. S. Department Agriculture, Bulletin No. 28, 1906.

1 Experiments on Losses in Cooking Meats, Grindley, U. S. Dep't Agricult., Bull. No. 141.

1 Chemical Composition of American Food Stuffs, Atwater and Bryant, U. S. Dep't Agricult., Bull. No. 28.

Name of Food.	Portion containing 100 calories roughly described.	Weight of 100 calories.	Actual amount of protein, fat, and carbohydrate in each portion of 100 calories.			
			Protein.	Fat.	Carbohydrates.	Gm.
UNCOOKED MEATS.						
1 Chicken, broilers, edible portion.....	Large serving.....	Gm. 90	Oz. 3.2	Gm. 18.6	Gm. 7.4	
1 Beef, loin, edible portion, average.....	Ordinary serving.....	50	1.8	9.5	9.6	
1 Beef, ribs, edible portion, average.....	Ordinary serving.....	52	1.8	9.2	13.7	
1 Beef, sirloin steak.....	Small steak.....	40	1.4	7.5	7.4	
1 Mutton, leg, hind, lean, edible portion, av.....	Ordinary serving.....	50	1.8	9.3	8.7	
1 Liver, veal, as purchased.....	Two small servings.....	79	2.8	15	39	
1 Cod, whole, edible portion.....	Two servings.....	138	4.9	15	4.1	
1 Halibut steaks, average.....	Ordinary serving.....	81	2.8	15	4.2	
1 Mackerel (Spanish).....	Ordinary serving.....	57	2.0	12.2	5.3	
1 Pork, ham, smoked, lean, edible portion, av.....	Small serving.....	36	1.3	5.9	13.9	
1 Pork, bacon, smoked, medium fat, average.....	Small serving.....	15	0.53	1.5	9.7	
DAIRY PRODUCTS.						
1 Butter, as purchased.....	Ordinary pat or ball.....	12.5	0.44	0.1	10.6	
1 Buttermilk, as purchased.....	1½ glasses.....	275	9.7	8.2	1.3	13.2
1 Cheese, American, pale, as purchased.....	1½ cubic inches.....	22	0.77	6.3	7.8	0.06
1 Cheese, cottage, as purchased.....	4 cubic inches.....	89	3.12	18.6	0.8	3.8
1 Cheese, full cream, as purchased.....	1½ cubic inches.....	23	0.82	5.9	7.7	0.55
1 Cream.....	¼ ordinary glass.....	49	1.7	1.2	9.0	2.2
1 Milk, whole, as purchased.....	Small glass.....	140	4.9	4.7	5.6	7.0
1 Milk, condensed, sweetened, as purchased.....	.....	30	1.06	2.6	2.4	16.2

1 Milk, condensed, unsweetened, evaporated cream, as purchased.....	5.7	5.5	6.7
2 Milk, skimmed, as purchased..... 1½ glasses.....	8.6	7.6	13.0
CEREALS.			
1 Bread, corn (johnny cake), as purchased..... Small square.....	1.3	1.7	17.5
2 Bread, white, home-made, as purchased..... Ordinary thick slice.....	1.3	0.6	20.2
3 Cornmeal, granular, average.....	0.96	0.5	20.3
4 Crackers, graham, as purchased..... Two crackers.....	0.82	2.1	16.8
5 Crackers, oatmeal, as purchased..... Two crackers.....	0.81	2.7	15.8
6 Hominy, cooked..... Large serving.....	4.2	0.2	21.3
7 Oatmeal, boiled, average..... One and a half serving.....	5.6	4.4	18.2
8 Rice, boiled, average..... Ordinary cereal dish.....	3.1	2.4	21.2
9 Rice, uncooked.....	0.98	2.2	0.8
10 Shredded wheat..... One biscuit.....	0.94	3.5	0.4
11 Rolls, Vienna..... One large roll.....	1.2	2.9	0.77
12 Spaghetti, average.....	0.97	3.4	0.11
13 Macaroni, cooked, average..... Ordinary serving.....	3.8	3.3	1.6
14 Zwieback..... Size of thick slice of bread.....	0.81	2.2	2.3
15 Wheat flour, white, average.....	0.97	2.9	0.3
VEGETABLES.			
1 Asparagus, as purchased, average.....	7.1	4.3	6.7
2 Beans, baked..... Small side dish.....	2.6	5.2	1.9
3 Beans, string, cooked..... Five servings.....	16.6	3.8	5.3

2 Chemical Composition of American Food Stuffs, Atwater and Bryant, U. S. Dep't Agricult., Bull. No. 28.

Name of Food.	Portion containing 100 calories roughly described.	Weight of 100 calories	Actual amount of protein, fat, and carbohydrate in each portion of 100 calories.			
			Protein.		Fat.	
			Gm.	Gm.	Gm.	Carbohydrates.
VEGETABLES						
2 Beans, lima, canned.....	Large side dish.....	Gm. 126	Oz. 4.4	Gm. 5.4	Gm. 0.4	Gm. 18.4
2 Beets, edible portion, cooked.....	Three servings.....	245	8.7	5.6	0.2	18.3
2 Cabbage, edible portion, cooked.....	Three servings.....	310	11.0	4.9	0.9	17.3
2 Carrots, edible portion, cooked.....	Two servings.....	164	5.8	1.8	0.65	15.3
2 Celery, edible portion.....	.....	540	19	6	0.5	17.8
2 Cauliflower, as purchased.....	.....	312	11	5.6	1.5	14.6
Corn, sweet, cooked.....	One side dish.....	99	3.5	2.8	1.2	19
2 Eggplant, edible portion, average.....	.....	350	12	4.2	1	17.8
Lentils, cooked.....	.....	89	3.1	22.9	0.9	52.6
2 Onions, fresh, edible portion, average.....	Two large servings.....	200	7.1	3.2	0.6	19.8
2 Onions, cooked.....	.....	240	8.4	2.9	4.3	11.7
2 Parsnips, edible portion, average.....	One and a half servings.....	152	5.3	2.4	0.7	20.5
2 Peas, green, cooked.....	One serving.....	85	3	5.7	2.9	12.4
Potatoes, baked.....	One, good sized.....	86	3	1.7	0.08	15.8
2 Potatoes, boiled.....	One, large sized.....	102	3.6	2.5	0.1	21.3
2 Potatoes, mashed and creamed.....	One serving.....	89	3.1	2.3	2.6	15.8
2 Potato chips.....	One-half serving.....	17	0.6	1.1	6.7	8
2 Potatoes, sweet, cooked.....	One-half average potato.....	49	1.7	1.4	1	20.6
2 Spinach, cooked, as purchased.....	Two ordinary servings.....	174	6.1	3.6	7.13	4.5
2 Squash, edible portion, average.....	.....	210	7.4	2.9	1	18.9

3 Succotash, canned, as purchased.....	Ordinary serving.....	100	3.5	3.6	1	18.6
3 Tomatoes, fresh, as purchased, average.....	Four average tomatoes.....	430	15	3.9	1.7	16.7
3 Tomatoes, canned.....	.....	431	15.2	5.1	0.86	17.2
3 Turnips, edible portion, average.....	Two large servings.....	246	8.7	3.1	0.5	20

FRUITS (DRIED)

3 Apples, as purchased, average.....	.....	34	1.2	0.54	0.74	22.4
3 Apricots, as purchased, average.....	.....	35	1.2	1.6	3	21.47
3 Figs, edible portion.....	One large one.....	31	1.1	1.3	....	23
3 Prunes, edible portion.....	Three large ones.....	32	1.1	0.7	....	23.4
3 Raisins, as purchased.....	.....	31	1.1	0.8	1	23.6

FRUITS (FRESH OR COOKED)

3 Apples, as purchased.....	Two apples.....	206	7.3	0.6	0.6	22
Apple sauce.....	Ordinary serving.....	111	3.9	0.2	0.8	41.3
3 Apricots, cooked.....	Large serving.....	131	4.6	1.1	....	22.6
3 Bananas, yellow, edible portion, average.....	One large.....	100	3.5	1.3	0.6	22
3 Blackberries, as purchased, average.....	.....	170	5.9	2.2	1.7	18.5
3 Blueberries, canned, as purchased.....	.....	165	5.8	1	1	21
Cantaloupe.....	Half ordinary serving.....	243	8.6	0.72	....	11
3 Cranberries, as purchased, average.....	.....	210	7.5	0.8	1.2	20.7
3 Grapes, as purchased, average.....	.....	136	4.8	1.3	1.6	19.5
3 Oranges, as purchased, average.....	One very large one.....	270	9.4	1.3	0.2	18.7
3 Peaches, as purchased, average.....	Three ordinary ones.....	290	10	1.4	0.3	22.3

³ Chemical Composition of American Food Stuffs, Atwater and Bryant, U. S. Dep't Agricult., Bull. No. 28.

Name of Food.	Portion containing 100 calories roughly described.	Weight of 100 calories.	Actual amount of protein, fat, and carbohydrate in each portion of 100 calories.			
			Protein.		Fat.	
			Gm.	Gm.	Gm.	Gm.
FRUITS (FRESH OR COOKED)						
1 Pear.....	One large pear.....	173	1	0.8	44.3	
Raspberries.....		178	1.7	...	22.4	
1 Strawberries, as purchased, average.....	Two servings.....	260	2.6	1.5	19.2	
CAKE, PUDDING, PASTRY DESSERTS.						
1 Cake, chocolate layer.....	Half ordinary square.....	28	1.7	2.2	12.7	
1 Sponge cake.....	Small piece.....	25	1.5	2.7	16.5	
1 Gingerbread, as purchased.....	Half ordinary square piece... 27	0.96	1.5	2.4	18	
Custard, milk.....	Ordinary cup.....	122	5.1	7.7	32	
Custard, tapioca.....	Two-thirds ordinary cup.....	69	2.3	2.1	18.4	
1 Doughnuts, as purchased.....	Half a doughnut.....	23	1.7	4.8	12.2	
1 Pie, apple, as purchased.....	One-third ordinary piece.....	38	1.1	3.7	16.3	
1 Pie, custard, as purchased.....	One-third ordinary piece.... 55	1.9	2.3	3.4	14.3	
1 Pie, cream, as purchased.....	One-fourth ordinary piece... 30	1.1	1.3	3.4	15.3	
1 Pie, lemon, as purchased.....	One-third ordinary piece.... 38	1.3	1.3	3.8	14.2	
Pudding, apple sago.....		81	2	0.8	23.7	
Pudding, cream, rice.....	Very small serving.....	75	3	3.4	23.5	
Pudding, Indian meal.....	Half ordinary serving.....	56	3	2.6	15.4	
Pudding, apple, tapioca.....	Small serving.....	79	0.2	0.07	23	
Tapioca, cooked.....	Ordinary serving.....	108	3.5	3.4	30.4	

MISCELLANEOUS.

1 Honey, as purchased.....	Four teaspoonfuls.....	30	1	0.1	....	24.3
2 Molasses, cane.....		35	1.2	0.8	....	24
3 Marmalade (orange peel).....		28	1	0.2	0.02	24
4 Sugar, granulated.....	3 teaspoonfuls (1 1/4 lumps) ..	24	0.8	....	....	24
5 Sugar, maple or syrup.....	Four teaspoonfuls.....	35	1.2	....	....	35
6 Almonds.....	Eight.....	15	0.5	3.1	8.2	2.6
7 Chestnuts, fresh, edible portion, as purchased, average.....		40	1.4	2.4	2.1	17
8 Peanuts.....	Thirteen double.....	18	0.62	4.6	8	4.4
9 Hickory nuts.....		13	0.47	2	8.7	1.5
10 Eggs, hens', boiled.....	One large egg.....	59	2.1	7.9	7.2	
11 Eggs, hens', white.....		181	6.4	22	....	
12 Eggs, hens', yolk.....	Two yolks.....	27	0.94	4.2	9	
13 Soup, beef, as purchased.....		380	13	16.7	1.5	4.1
14 Soup, bean, as purchased.....	Very large plate.....	150	5.4	4.8	2.1	14
15 Soup, cream of celery, as purchased.....	Two plates.....	180	6.3	3.7	5	9
16 Consommé, as purchased.....		830	29	20.7	....	3.3

* Chemical Composition of American Food Stuffs, Atwater and Bryant, U. S. Dep't Agricult., Bull. No. 28.

LIST OF FOODS, THEIR COMPOSITION, CALORIC VALUE¹

Food	Gm. amt.	Oz.	Pro.	Fat	CH.	Rough measure	Calories
Huckleberries.....	100	3½	2.6	0.6	16.0	4 Tablespoons	73.0
Lemon juice.....	15	½	.....	.....	1.5	1 Tablespoons	6.0
Lemon juice.....	100	3½	.....	.....	10.0	½ glass	41.0
Muskmelon.....	100	3½	0.6	.....	9.0	Edible portion, ½ av. size	39.0
Pears.....	100	3½	0.6	0.5	14.0	1 average	65.0
Prunes, dried.....	100	3½	2.0	.....	73.0	.....	308.0
Raisins, dried.....	100	3½	2.0	3.0	76.0	.....	348.0
Nectarines.....	100	3½	0.4	0.5	14.0	1 average	64.0
Pineapple.....	100	3½	0.4	0.3	10.0	2 av. slices	45.0
Plums.....	100	3½	1.0	.....	20.0	2 av. size	86.0
Raspberries.....	100	3½	1.0	.....	12.0	4 Tablespoons	53.0
Watermelon.....	270	1.1	0.5	18.0	1 large slice	83.0	83.0
Apricots.....	100	3½	0.1	1.0	15.0	2 av.	71.0
<i>Nuts</i>							
Almonds.....	15	½	3.1	8.2	2.6	10 large	100.0
Brazil nuts.....	60	2	10.2	40.1	4.2	10 large	432.0
Chestnuts.....	50	.....	2.6	2.2	17.7	Roasted, 1 handful or 20 nuts	104.0
Cocoanuts.....	34	1	1.9	17.2	9.5	1 slice 2×2×½	207.0
Filberts.....	30	1	4.8	14.2	3.9	10 nuts	216.0
Peanuts.....	30	1	5.8	8.7	5.5	1 handful, 15 nuts	128.0
Pecans.....	30	1	3.3	21.3	4.0	10 large	229.0
Pistachios.....	5	.....	1.1	2.7	0.8	10 large	33.0
Walnuts.....	42	.....	7.7	27.0	5.5	10 large	306.0
<i>Meats</i>							
Chicken, broiler.....	100	3½	21.5	2.5	.....	Roasted, av. serving	110.0
Chicken, fowl.....	100	3½	19.0	16.3	.....	Roasted, av. serving	230.0
Chicken, fowl.....	100	3½	17.6	11.5	.....	Boiled av. hospital diabetic chicken	180.0
Chicken, fowl.....	100	3½	17.6	7.6	.....	Boiled 3 hr. after skimming, remove fat	143.0
Squab.....	100	3½	16.2	36.2	.....	Av. size	325.8
	100	3½	22.6	2.8	.....	Very lean, av. serving	120.0
	100	3½	19.5	7.3	.....	Lean, av. serving	148.0
Round steak.....	100	3½	23.0	2.5	.....	Free from all visible fat	118.0
	100	3½	22.0	2.5	.....	Scraped fat-free, 2 patties	110.0
Porterhouse steak...	100	3½	21.9	20.4	.....	Av. serving 3½, 2×2×1 in.	270.5
Tenderloin.....	100	3½	16.2	24.4	.....		293.0
Sirloin.....	100	3½	19.1	18.0	.....		245.0
Top sirloin.....	100	3½	13.8	43.7	.....		463.2
Roast beef.....	100	3½	18.0	28.6	.....		339.8

¹ Prepared by Geyelin. Foster from Atwater and Bryant as basis.

**LIST OF FOODS, THEIR COMPOSITION, CALORIC
VALUE—(Continued)**

Food	Gm. amt.	Oz.	Pro.	Fat	CH.	Rough measure	Cal- ories
<i>Cereals, Bread, Etc.</i>							
Bread, white.....	30	1	2.9	.....	16.0	1 slice medium, $3\frac{1}{2} \times 3\frac{1}{2} \times \frac{1}{2}$.	70.0
Bread, white.....	40	$1\frac{1}{2}$	3.9	0.1	21.0	1 slice, thick	102.0
Breakfast roll.....	40	$1\frac{1}{2}$	3.9	0.1	21.1	1	102.0
Vienna-French roll...	60	2	5.3	1.5	35.2	1	180.0
Triscuit.....	12	...	1.2	0.1	9.4	1	45.0
Zweibach.....	8	...	0.8	0.8	6.1	$3 \times 1 \times \frac{1}{2}$ in.	36.0
Graham cracker.....	9	...	1.0	1.0	7.0	1	42.0
Saltine.....	4	...	0.4	0.5	3.0	1	29.0
Uneda biscuit.....	7	...	0.7	0.6	5.1	1	18.0
Shredded wheat biscuit.....	30	1	3.1	0.4	23.6	1	113.0
$\frac{1}{2}$ milk oatmeal gruel	100	...	3.1	3.5	4.7	1 glass	102.0
$\frac{1}{2}$ thin oatmeal.....	180	...	1.5	0.5	7.1	1 glass	102.0
Oatmeal.....	100	$3\frac{1}{2}$	3.8	1.4	17.8	5 T or 25 gm. wgd. dry, cooked c, 100 c.c. H ₂ O or $\frac{1}{2}$ cup, 3 T.	101.6
Cream of wheat.....	100	$3\frac{1}{2}$	3.0	0.2	19.1	$\left\{ \begin{array}{l} 4 \text{ T or } 25 \text{ gm. dry in} \\ 150 \text{ c.c.} = \frac{1}{2} \text{ cup} \\ = 4 \text{ T.} \end{array} \right\}$	92.5
Farina.....	100	$3\frac{1}{2}$	3.0	0.2	18.8		91.3
Rice.....	100	$3\frac{1}{2}$	1.7	0.1	20.5	3 round T. or 25 gm. 100 c.c. H ₂ O = 3 T.	92.0
<i>Fish</i>							
Oysters.....	100	$3\frac{1}{2}$	6.2	1.2	3.7	6 large = 8 small	52.2
Salmon, fresh.....	100	$3\frac{1}{2}$	22.0	12.8	.....	1 slice $3\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{2}$	209.0
Salmon, canned.....	100	$3\frac{1}{2}$	21.8	12.1	.....	3 heaping T.	202.0
Blue fish.....	100	$3\frac{1}{2}$	25.9	4.5	.....	Av. serving	158.0
Cod fish.....	100	$3\frac{1}{2}$	21.7	2.1	.....	Av. serving	91.5
Halibut.....	100	$3\frac{1}{2}$	19.5	5.7	.....	Av. serving	130.2
Mackerel.....	100	$3\frac{1}{2}$	18.0	6.8	.....	Av. serving	137.0
Sardines.....	100	$3\frac{1}{2}$	23.0	19.7	.....	5 large = 9 small	277.5
<i>Fruits</i>							
Orange.....	100	$3\frac{1}{2}$	0.8	0.2	11.6	1 small.	50.0
Orange juice.....	100	$3\frac{1}{2}$	0.8	0.2	11.6	$\frac{1}{2}$ glass	50.0
Grapefruit.....	100	$3\frac{1}{2}$	.....	.....	5.0	$\frac{1}{2}$ large or 1 small or $\frac{1}{2}$ glass.	205.0
Strawberries.....	100	$3\frac{1}{2}$	1.0	0.6	7.0	2 heaping T. or 6 large berries.	38.0
Peach.....	100	$3\frac{1}{2}$	0.7	0.1	9.0	1 av.	41.0
Apple.....	100	$3\frac{1}{2}$	0.4	0.5	14.0	1 av. edible portion	64.0
Banana.....	100	$3\frac{1}{2}$	1.0	0.6	22.0	1 av.	100.0
Blackberries.....	100	$3\frac{1}{2}$	1.0	0.1	11.0	3 Tablespoons	59.0
Cherries.....	100	$3\frac{1}{2}$	0.1	.....	15.0	18 cherries	71.0
Cranberries.....	100	$3\frac{1}{2}$	0.4	0.6	10.0	3 Tablespoons	48.0
Currants.....	100	$3\frac{1}{2}$	1.0	.....	13.0	5 Tablespoons	57.0
Figs, dried.....	100	$3\frac{1}{2}$	4.0	0.3	74.0	5 Figs	71.0
Grapes.....	100	$3\frac{1}{2}$	1.0	1.0	14.0	20 av.	323.0

LIST OF FOODS, THEIR COMPOSITION, CALORIC VALUE
(Continued)

Food	Gm. amt.	Oz.	Pro.	Fat	CH.	Rough measure	Cal- ories
<i>Canned Vegetables</i>							
Artichokes.....	100	3½	0.8	.....	5.0	1 av.	23.8
Asparagus.....	100	3½	1.5	0.1	2.6	5 stalks or 3 T.	18.5
String beans.....	100	3½	1.1	0.1	3.8	3 T.	21.0
Wax beans.....	100	3½	1.0	0.1	3.1	3 T.	17.7
Lima beans.....	100	3½	4.0	0.3	14.6	3 T.	79.0
Red kidney beans..	100	3½	7.0	0.2	18.5	2 T.	106.2
Brussel sprouts....	100	3½	1.5	0.1	3.4	3 T.	21.0
Corn.....	100	3½	2.8	1.2	19.0	3 T.	100.6
Peas.....	100	3½	3.6	0.2	9.8	3 T.	57.0
Pumpkin.....	100	3½	0.8	0.2	6.7	3 T.	32.5
Squash.....	100	3½	0.9	0.5	10.5	3 T.	51.3
Succotash.....	100	3½	3.6	0.2	9.8	3 T.	57.0
Tomato.....	100	3½	1.2	0.2	4.0	3 T.	23.2
<i>Dairy Products</i>							
Egg, white.....	28	1	3.1	.....	.....	1 av.	76.4
Egg, yoke.....	17	...	2.6	5.7	.....	1 av.	63.0
Cottage cheese....	40	...	8.6	.....	.....	1 cube 1½ × 1½ × 1½	42.2
American cheese....	50	...	14.0	17.5	.....	1 piece 1½ × 1½ × 1 in.	224.4
Neufchatel cheese..	...	...	.....	.....	.....	1 piece 2 × 1½ × 1½ in.	168.5
Butter.....	30	1	.....	25.0	.....	1 rounding T.	237.1
Butter.....	15	½	.....	12.7	.....	1 level T.	118.0
Butter.....	10	...	.....	8.5	.....	1 piece 1 × 1 × ¼ = 1 lev.	79.0
Cream, 19%.....	30	1	0.8	5.7	1.4	1 single serving.	61.9
Cream, 38%.....	30	1	0.8	11.4	1.4	1 single serving.	120.0
Cream Sheffield....	100	3½	22.6	38.0	2.4	½ glass.	374.0
Cream, 19%.....	100	3½	2.6	19.0	4.6	½ glass.	206.0
Milk.....	100	3½	3.1	3.5	4.7	½ glass.	64.0
Butter milk.....	100	3½	3.5	0.05	3.2	Walker-Gordon ½ glass	27.9
Fat-free milk.....	100	3½	3.5	0.05	5.0	Walker-Gordon ½ glass	35.2
Dry malted milk..	7	...	1.0	0.6	4.7	1 T. = 1 teaspoon	28.9
Hortons ice-cream..	100	3½	4.0	6.4	23.4	Av. serving = ½ cup	172.0
Whey.....	108	6	1.8	0.5	9.3	1 glassful = 1 large cup	42.3
Whey.....	15	½	0.1	.....	0.7	1 T.	3.0
Junket.....	100	3½	3.1	3.5	10.0	3 T.	85.0
Baked custard.....	100	3½	5.4	5.8	10.0	3 T.	117.0
<i>Alcohol</i>							
Sherry.....	30	1	al	cohol	.....	2 T.	30.0
Brandy.....	30	1	.....	.....	.....	2 T.	98.0
Whisky.....	30	1	.....	.....	.....	2 T.	87.0
Rum.....	30	1	.....	.....	.....	2 T.	95.0
Gin.....	30	1	.....	.....	.....	2 T.	70.0

LIST OF FOODS, THEIR COMPOSITION, CALORIC VALUE

(Continued)

Food	Gm. amt.	Oz.	Pro.	Fat	CH.	Rough measure	Cal- ories
Lamb chops.....	50	1 $\frac{3}{4}$	9.3	14.2	....	1 French chop, bone and some fat	170.2
Lamb chops.....	100	3 $\frac{1}{4}$	18.7	28.3	....	3 large c all bone and visible fat removed	329.8
Lamb roast.....	100	3 $\frac{1}{4}$	19.0	20.6	....	Breast av. serving	269.9
Lamb roast.....	30	1	5.7	6.2	....	1 thin slice	81.0
Lamb roast.....	100	3 $\frac{1}{4}$	19.0	16.5	....	1 medium slice (leg)	232.0
Veal breast.....	100	3 $\frac{1}{4}$	21.0	8.0	....	1 large slice	161.0
Tongue, cold.....	25	1	4.9	5.8	....	1 medium slice	74.0
Smoked ham.....	75	...	15.2	16.8	....	1 large slice, cold boiled	218.5
Smoked ham.....	100	3 $\frac{1}{4}$	14.9	28.5	....	1 medium slice, bone- less raw	326.0
Sweetbread.....	100	3 $\frac{1}{4}$	17.6	13.3	....	Av. serving	195.9
Pork chops.....	100	3 $\frac{1}{4}$	18.4	39.0	....	Av. chop	438.0
Guinea hen.....	100	3 $\frac{1}{4}$	26.7	7.0	....		
Bacon.....	100	3 $\frac{1}{4}$	15.5	42.6	....	Edible portion 9 av. slices	459.7
Bacon, medium fat	100	3 $\frac{1}{4}$	9.5	67.4	....	Edible portion 9 av. slices	667.4
Bacon, lean.....	10	...	1.5	4.3	....	1 thin slice 1×3 in.	46.0
Bacon, medium fat	10	...	1.0	6.8	....	1 thin slice 1×3 in.	67.0
Turkey.....	100	3 $\frac{1}{4}$	21.0	22.9	....	Av. serving	299.4
<i>Miscellaneous</i>							
Sugar.....	15	$\frac{1}{2}$	....	....	15.0	1 level T.	61.0
Chocolate.....	28.7	1	4.0	14.0	8.7	1 square	183.2
Gelatin.....	8	...	7.3	....	....	1 T.	30.0
Olive oil.....	15	$\frac{1}{2}$	....	13.6	....	1 T.	126.5
Beef broth.....	180	6	1.2	....	....	1 cup	4.9
Beef juice.....	100	3 $\frac{1}{4}$	3.8	....	....	$\frac{1}{2}$ glass from lean steak	5.6
Lactose.....	8	...	....	....	8.0	1 T.	33.0
Peanut butter.....	100	3 $\frac{1}{4}$	29.3	46.5	17.1	.....	622.2
Tomato catsup....	20	...	0.3	....	2.5	1 T.	10.1
Cube sugar.....	7	....	....	....	7.0	1 cube	28.7
Domino sugar.....	6	....	....	....	6.0	1 domino	24.6
Granulated sugar..	10	....	....	....	10.0	1 heaping T.	41.0
Powdered sugar....	12	....	....	....	12.0	1 heaping T.	49.2
Maple sugar.....	100	3 $\frac{1}{4}$	....	....	82.8	1 cake	339.4
Honey.....	30	1	0.12	....	24.4	1 T.	101.0
Maple sugar.....	30	1	....	....	21.4	1 T.	88.0

LIST OF FOODS, THEIR COMPOSITION, CALORIC VALUE
(Continued)

Food	Gm. amt.	Oz.	Pro.	Fat	CH.	Rough measure	Cal- ories
<i>Fresh Vegetables</i>							
Artichoke.....	100	3½	2.6	0.2	16.7	1 small	81.0
Asparagus.....	100	3½	1.8	0.2	3.3	3 T. cooked or g. stalks	22.8
Butter beans.....	100	3½	9.4	0.6	29.1	3 heaping T.	163.4
Lima beans.....	100	3½	7.1	0.7	22.0	3 heaping T.	125.8
String beans.....	100	3½	2.3	0.3	7.4	1 heaping T.	42.5
Beets.....	100	3½	2.3	0.1	9.4	1 av. size or 3 cut up	40.6
Cabbage.....	100	3½	1.6	0.3	5.6	3 T.	32.3
Carrots.....	100	3½	1.1	0.4	9.3	3 T.	46.3
Cauliflower.....	100	3½	1.8	0.5	4.7	3 T.	31.2
Celery.....	100	3½	1.1	0.1	3.3	6 stalks 4½ in. long	18.9
Corn.....	100	3½	3.1	1.1	19.7	3 heaping T. cut off = 1 small	103.7
Cucumber.....	100	3½	0.8	0.2	3.1	4 T. sliced	17.9
Egg plant.....	100	3½	1.2	0.3	5.1	3 av. slices	28.6
Beet greens.....	100	3½	2.2	3.4	3.2	3 T. cooked	53.7
Dandelion greens...	100	3½	2.4	1.0	10.6	3 T. cooked	62.3
Lettuce.....	100	3½	1.2	0.3	2.9	8 medium leaves = ½ small head	19.6
Mushrooms.....	100	3½	3.0	0.4	7.0	4 T.	45.0
Onions, raw.....	100	3½	1.6	0.3	9.9	1 large or 2 small	49.8
Onions, cooked.....	100	3½	1.2	0.4	4.9	2 heaping T. or 2 in. onions	28.7
Parsnips.....	100	3½	1.6	0.5	13.5	3 T. or 1 small parsnip	66.5
Green peas.....	100	3½	7.0	0.5	16.0	3 T.	98.6
Potato, sweet.....	100	3½	2.0	0.7	27.0	1 small	125.0
Potato, boiled.....	100	3½	2.5	0.1	20.9	1 medium	96.8
Potato, baked.....	100	3½	2.2	0.1	18.4	1 medium	85.4
Pumpkins.....	100	3½	1.0	0.1	5.2	3 T.	26.3
Radishes.....	100	3½	1.3	0.1	5.8	12 av. size	123.4
Rhubarb.....	100	3½	0.6	0.7	3.6	3 heaping T.	23.7
Sauerkraut.....	100	5½	1.7	0.5	3.8	3 T.	27.1
Spinach, fresh.....	100	3½	2.1	0.3	3.2	Cooked 3 heaping T.	24.5
Squash.....	100	3½	1.4	0.5	9.0	3 T.	47.2
Tomatoes, raw.....	100	3½	0.9	0.4	3.9	1 small tomato	24.3
Tomatoes, cooked....	100	3½	0.9	0.4	3.9	3 T.	24.3
Turnips.....	100	3½	1.3	0.2	8.1	3 T.	40.4
Olives, green.....	100	3½	0.8	20.2	8.5	12 large = 22 small	226.0
Olives, green.....	10	...	0.07	1.8	0.8	1 large	20.0
Olives, ripe.....	100	3½	1.4	21.0	3.5	As purchased	215.4
Brussel sprouts.....	100	3½	1.4	0.1	3.5	3 T.	21.0

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Volume I published May, 1907; Volume II published June, 1908.

American Journal of Medical Sciences

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